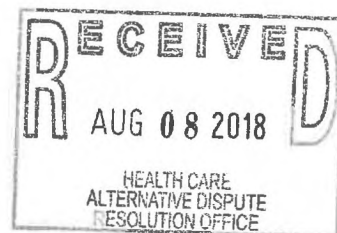


IN THE HEALTHCARE ALTERNATIVE DISPUTE  
RESOLUTION OFFICE OF MARYLAND



TAMMIE FRALEY, *et al.*,

Claimants,

TO THE USE OF CHARLES  
FRANKLIN HAYNES and  
CHRISTOPHER WILLIAM LARUE

Use-Claimants

*v.*

MERITUS MEDICAL CENTER, INC.,  
*et al.*

Healthcare Providers.

HADRO Claim No. 2018-370

LINE

Dear Clerk:

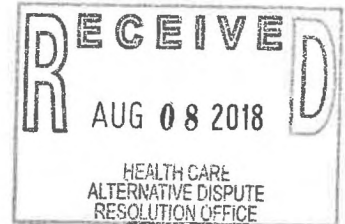
Please find enclosed two copies of each Certificate of Qualified Expert, Attesting Expert Report, and *curriculum vitae* of Jerome Barakos, M.D.; David H. Goldstein, M.D.; Matthew Ammerman, M.D.; and Robert Arbeit, M.D. Kindly date stamp and file all three original documents and date stamp and return the copies.

Respectfully submitted,

PAULSON & NACE, PLLC

A handwritten signature in black ink, appearing to read "Matthew A. Nace".

Matthew A. Nace, Esq.  
1025 Thomas Jefferson St., NW  
Suite 810  
Washington, DC 20007  
202-463-1999 – Telephone  
202-223-6824 – Facsimile  
[man@paulsonandnace.com](mailto:man@paulsonandnace.com)  
*Counsel for Claimants*



IN THE HEALTH CARE ALTERNATIVE DISPUTE RESOLUTION OFFICE

TAMMIE FRALEY, Individually, and as  
Personal Representative of the ESTATE OF  
JESSICA HAYNES, *et al.*,

Claimants,

*v.*

MERITUS MEDICAL CENTER, INC., *et*  
*al.*,

Health Care Providers.

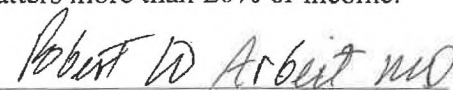
Case No.

**CERTIFICATE OF QUALIFIED EXPERT**

I, Robert David Arbeit, M.D., do hereby certify and affirm that:

1. I am Board Certified in Internal Medicine and Infectious Disease by the American Board of Internal Medicine and have had clinical experience in the field of internal medicine and Infectious Disease within the past five years of the date of the events which form the basis of this litigation. My Attesting Report and *curriculum vitae* are attached hereto.
2. I have reviewed medical records pertaining to Jessica Haynes regarding health care services rendered by Berkeley Medical Center, Meritus Medical Center, War Memorial Hospital, Ruby Memorial Hospital, Select Specialty Hospital, Shenendoah Center, Brightwood Center, as well as the radiology studies from Meritus Medical Center, the Death Certificate, and Dr. Barakos' report.
3. Based upon my experience in internal medicine and infectious disease as well as the medical records and information provided in this case, it is my opinion, within a reasonable degree of medical certainty that the internists and infectious disease physicians who were taking care of Ms. Haynes violated the standard of care and had the standard of care been adhered to while Ms. Haynes was admitted to Meritus Medical Center she would have undergone surgical treatment that would have resulted in a successful outcome and would not have incurred the subsequent medical care she endured and her ultimate death.
4. I do not spend more than 20% of my professional time on medical legal matters, nor is my compensation from such matters more than 20% of income.

DATE: 4 June 2018

  
Robert D. Arbeit, M.D.



IN THE HEALTH CARE ALTERNATIVE DISPUTE RESOLUTION OFFICE

TAMMIE FRALEY, Individually, and as  
Personal Representative of the ESTATE OF  
JESSICA HAYNES, *et al.*,

Case No.

Claimants,

*v.*

MERITUS MEDICAL CENTER, INC., *et al.*,

Health Care Providers.

**ATTESTING EXPERT REPORT**

My name is Robert Arbeit, M.D. and I am a board certified in Internal Medicine and Infectious Disease by the American Board of Internal Medicine and currently practice Internal Medicine and Infectious Disease in the Commonwealth of Massachusetts. My *curriculum vitae* is attached hereto.

It is my opinion to within a reasonable degree of medical certainty that the Healthcare Providers rendering care to Jessica Haynes at Meritus Medical Center on the Hospitalist team who are internists as well as the consulting Infectious Disease physicians violated the standard of care by failing to include in their differential diagnosis a brain abscess and to appropriately rule in or out the various conditions on their differential diagnosis. It is also my opinion that those same healthcare providers violated the standard of care in failing to obtain an MRI study subsequent to the June 6, 2016 MRI scan and prior to discharge. It is further my opinion that the same healthcare providers violated the standard of care in failing to consult with a neurosurgeon for treatment. Additionally, it is my opinion that the infectious disease physicians failed to properly rule in/rule out an abscess; improperly failed to get a follow up spinal tap to determine the development – if any – of monocyte vs. polymorphonuclear leukocyte predominance in arriving at a diagnosis of aseptic meningitis; and failed to appropriately follow-up with the patient.

According to the medical records, the healthcare providers whose care falls under the category of the “hospitalist team” acting as internists whom I am critical, include the following: Brad Young, PA-C; Dr. Njomo; Dawit Wubie, M.D.; Chintu Sharma, M.D; Sherry Baldassari, N.P.; Elizabeth Konadu, M.D.; and others whose names may not yet be discernable from the records. According to the medical records, the healthcare providers whose care falls under the category of “infectious disease physicians” whom I am critical,


include the following: Mohammed Bilgrami, M.D.; and others whose names may not yet be discernable from the records.

Specifically, it is my opinion within a reasonable degree of medical probability that an abscess should have been on the working differential diagnosis once the results of the spinal tap were available. Additionally, a neurosurgery consultation should have been requested no later than June 6, 2016 after the MRI was reported and identified ring enhancement around the previously visualized lesion. At that point, the infectious disease physicians, including but not limited to Dr. Bilgrami, should have worked in connection with the hospitalist team and neurosurgeon to determine whether or not the patient could have been managed medically or required surgical intervention. The ultimate determination on the type of surgical intervention would have been made by the neurosurgeon. If a neurosurgeon was not available at Meritus, the standard of care would have required a transfer to a facility that could offer such treatment. Further, at that time the patient had been taken off of ceftriaxone and begun on systemic corticosteroids. It is my opinion that after the June 6, 2016 MRI demonstrated features of an abscess, the patient should have been placed back on the ceftriaxone and the steroids should have been discontinued.

Within a reasonable degree of medical certainty, had the standard of care been met at any point in time that she was admitted at Meritus Medical Center Ms. Haynes not only would have survived, but she would have suffered only limited neurological deficits similar to those that she initially presented with such as right upper extremity hemiparalysis and modest speech deficits that would have improved over time.

This is a preliminary report and if new information is brought to my attention, I may revise, expand, or otherwise amend my opinions prior to any trial.

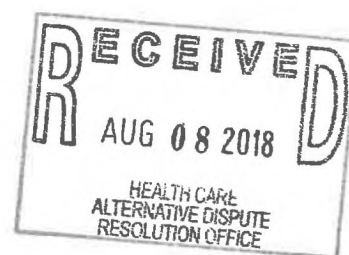
DATE: 4 June 2018

  
Robert D. Arbeit, M.D.



## CURRICULUM VITAE

### Robert David Arbeit



#### HOME ADDRESS:

24 Oldham Road  
West Newton, MA 02465  
Cell: 617-762-6783  
Fax: 617-507-2448  
email: robert.arbeit@gmail.com

#### EDUCATION

1968 B.A. Williams College, Williamstown, MA  
1972 M.D. Yale University School of Medicine, New Haven, CT

#### EMPLOYMENT

1979 - 1991 Staff Physician, Infectious Diseases Section, Medical Service, VA Medical Center, Boston, MA  
1991 - 2000 Associate Chief of Staff for Research, VA Medical Center, Boston, MA  
2001 - 2002 Director of Medical Operations, Cubist Pharmaceuticals, Inc., Lexington, MA  
2002 Executive Medical Director, Cubist Pharmaceuticals, Inc., Lexington, MA  
2003 - 2007 Executive Director, Clinical Research, Paratek Pharmaceuticals, Inc., Boston, MA  
2007 - 2009 Vice President, Clinical Development, Paratek Pharmaceuticals, Inc., Boston, MA  
2009 - 2015 Vice President, Clinical Development, Idera Pharmaceuticals, Inc., Cambridge, MA  
2015 - 2016 Sr. Vice President, Clinical Development and Translational Research, X4 Pharmaceuticals, Cambridge, MA  
2016 - present Consultant, Clinical Development

#### CLINICAL AND TRAINING APPOINTMENTS

1972 - 1973 Intern in Medicine, Yale-New Haven Hospital, New Haven, CT  
1973 - 1974 Resident in Medicine, Yale-New Haven Hospital, New Haven, CT  
1974 - 1976 Clinical Associate, Immunology Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD  
1976 - 1977 Clinical Fellow in Infectious Diseases, Beth Israel Hospital, Children's Hospital Medical Center, Sidney Farber Cancer Institute, Boston, MA  
1977 - 1979 Research Fellow in Infectious Diseases, Sidney Farber Cancer Institute, Boston, MA  
1979 - 2000 Staff Physician, Infectious Diseases Section, Medical Service, VA Medical Center, Boston, MA  
2001 - 2007 Attending Physician (WOC), Infectious Diseases Section, Medical Service, VA Medical Center, Boston, MA  
2006 - present Attending Physician, Infectious Diseases Section, Tufts Medical Center, Boston, MA

#### ACADEMIC APPOINTMENTS

1979 - 1987 Assistant Professor of Medicine, Boston University School of Medicine, Boston, MA  
1987 Visiting Scientist, Section of Molecular Genetics and Epidemiology, Boston University School of Public Health, Boston, MA  
1987 - 1995 Associate Professor of Medicine, Boston University School of Medicine,  
1992 - 2000 Associate Professor of Microbiology, Boston University School of Medicine  
1995 - 2000 Professor of Medicine, Boston University School of Medicine, Boston, MA  
2005 - present Adjunct Professor of Medicine, Tufts University School of Medicine, Boston, MA

## ADMINISTRATIVE APPOINTMENTS

1988	Acting Associate Chief of Staff for Research, VA Medical Center, Boston, MA
1989 - 1991	Assistant Chief, Medical Service, VA Medical Center, Boston, MA
1991 - 2000	Director, Infectious Diseases Research, VA Medical Center, Boston, MA
1991 - 2000	Associate Chief of Staff for Research, VA Medical Center, Boston, MA
1991 - 2000	President and Chairman, Board of Directors, Boston VA Research Institute, Inc., Boston, MA ( <i>a non-profit research foundation</i> )
1994 - 1998	Chair, Strategic Planning Committee, VA Medical Center, Boston, MA
1995	Director, Combined Boston University Infectious Diseases Fellowship Training Program, Boston University School of Medicine
1995 - 2000	Chief, Infectious Diseases Section, VA Medical Center, Boston, MA

## MEMBERSHIP ON ADVISORY COMMITTEES

1989 - 1992	Member, Research Advisory Group, Medical Research Service, Department of Veterans Affairs, Washington, D.C. (Chairman, 1991 - 1992)
1990 - 1991	Staff, Advisory Committee for Health Research Policy, Department of Veterans Affairs, Washington, D.C.
1992 - 2000	Member, Advisory Board, Tuberculosis Center, Public Health Research Institute, New York, NY
1993 - 1996	Member, Evans Seminar Committee, Evans Medical Foundation, Department of Medicine, Boston University School of Medicine
1995	Member, Search Committee for Chief, Research and Development Officer, Department of Veterans Affairs, Washington, D.C.
1996 - 1997	Member, Steering Committee for Tertiary Care Consolidation Project, New England Veterans Healthcare Network, Boston, MA
1997 - present	Member, Executive Committee, VA Cooperative Study #403, "Trial of Varicella Vaccine for the Prevention of Herpes Zoster and Its Complications".
1998 - 1999	Member, Research Advisory Committee, Department of Medicine, Boston University School of Medicine, Boston MA
1998 - 2000	Member, Research Advisory Committee, Genetics Program, Boston University School of Medicine, Boston MA
1999, 2000	Ad hoc member, Bacteriology and Mycology - 1 (BM - 1), Study Section, NIH
2000	Chair, Search Committee for Deputy Director, Medical Research Service, Department of Veterans Affairs, Washington, D.C.
2000 - 2010	Member, Executive Committee, Dar es Salaam-Dartmouth Health Study, Dartmouth Medical Center, Hanover, NH
2000 - 2004	Member, Scientific Advisory Board, Verax, Inc., Worcester, MA
2001 - 2006	Member, Board of Directors, Boston VA Research Institute, Inc., Boston, MA ( <i>a non-profit foundation</i> )
2002 - 2007	Chairholder, Subcommittee on Molecular Methods for Bacterial Strain Typing, NCCLS, Wayne, PA
2004	Member, Biodefense Proteomics Research Programs, Review Committee, NIH
2008 - 2010	Member, Subcommittee on Molecular Methods for Detection of MRSA, CLSI (formerly NCCLS), Wayne, PA

## HONORS

1967	Phi Beta Kappa
1968	B.A., summa cum laude
1972	Alpha Omega Alpha
1972	M.D., cum laude

## CERTIFICATION AND LICENSURE

1975 American Board of Internal Medicine (Internal Medicine)  
1978 American Board of Internal Medicine (Infectious Diseases)  
1977 Licensed, Commonwealth of Massachusetts

## MEMBERSHIPS

1977 American Society for Microbiology  
1981 Infectious Diseases Society of America (Fellow)  
1982 American College of Physicians (Fellow)  
1985 VA Society for Practice of Infectious Diseases

## EDITORIAL BOARDS

1995 - 2005 Clinical Infectious Diseases  
2000 - present Infection

EDITORIAL REVIEWER (*within past 3 years*)

Chest  
Clinical Infectious Diseases  
Infection Control and Hospital Epidemiology  
New England Journal of Medicine  
Public Library of Science (PLoS) One

## PUBLICATIONS

1. Arbeit RD, Sach DH, Amos DS, Dickler HB. Human lymphocyte alloantigen(s) similar to murine immune region-associated antigens. *J Immunol* 1975;115:1173-1175.
2. Ryan JL, Arbeit RD, Dickler HB, Henkart PA. Inhibition of lymphocyte mitogenesis by immobilized antigen-antibody complexes. *J Exp Med* 1975;142:814-826.
3. Dickler HB, Arbeit RD, Henkart PA, Sachs DH. Association between Ia antigens and Fc receptors on certain T lymphocytes. *J Exp Med* 1976;144:282-290.
4. Dickler HB, Kubicek MT, Arbeit RD, Sharrow SO. Studies on the nature of the relationship between Ia antigens and Fc receptors on murine B lymphocytes. *J Immunol* 1977;119:348-354.
5. Arbeit RD, Henkart PA, Dickler HB. Differences between the Fc receptors of two lymphocyte subpopulations of human peripheral blood. *Scand J Immunol* 1977;6:873-878.
6. Brown E, Freedman S, Arbeit RD, Come S. Invasive Aspergillosis in a non-immunocompromised host. *Am J Med* 1980;69:624-627.
7. Levin MJ, Leary PL, Arbeit RD. Effect of acyclovir on the proliferation of human fibroblasts and peripheral blood mononuclear cells. *Antimicrob Agents Chemo* 1980;17:947-953.
8. vonReyn CF, Levy BS, Arbeit RD, Friedland G, Crumpacker CS. Infective Endocarditis: An analysis based on strict case definitions. *Ann Intern Med* 1981;94:505-515.
9. Arbeit RD, Leary PL, Levin MJ. Interferon production by combinations of human lymphocytes, monocytes, and cultured macrophages. *Infect Immun* 1982;35:383-390.
10. Arbeit RD, Zaia JA, Valerio MA, Levin MJ. Infection of human peripheral blood mononuclear cells by Varicella-Zoster Virus. *Intervirology* 1982;18:56-65.
11. McGowan SE, Arbeit RD, Stone PJ, Snider GL. A comparison of the binding and fate of internalized neutrophil elastase by human monocytes and alveolar macrophages. *Amer Rev Resp Dis* 1983;128:688-694.

12. Friedland G, von Reyn CF, Levy B, Arbeit RD, Dasse P, Crumpacker C. Nosocomial endocarditis. *Infection Control* 1984;5:284-288.
13. Arbeit RD, Karakawa WW, Vann WF, Robbins JB. Predominance of two newly described capsular polysaccharide types among clinical isolates of *Staphylococcus aureus*. *Diag Microbiol Infect Dis* 1984;2:85-91.
14. Libman H, Arbeit RD. Complications associated with *Staphylococcus aureus* bacteremia. *Arch Int Med* 1984;144:541-545.
15. Nelles MJ, Niswander CA, Karakawa WW, Vann WF, Arbeit RD. Reactivity of type-specific monoclonal antibodies with *Staphylococcus aureus* clinical isolates and purified capsular polysaccharides. *Infect Immun* 1985;49:14-18.
16. Karakawa WW, Fournier JM, Vann WF, Arbeit RD, Schneerson RS, Robbins JB. A method for serological typing of the capsular polysaccharides of *Staphylococcus aureus*. *J Clin Micro* 1985;22:445-447.
17. Arbeit RD, Fears JR, Plomann M. The development of disease-specific patterns of care for achieving cost containment and quality assurance. *Quality Review Bulletin* 1985;11:235-239.
18. Verghese A, Widrich WC, Arbeit RD. Central venous septic thrombophlebitis - the role of medical therapy. *Medicine* 1985;64:394-400.
19. Verghese A, Mireault K, Arbeit RD. Group B Streptococcal bacteremia in men. *Rev Infect Dis* 1986;8:912-917.
20. Arbeit RD, Nelles MJ. Capsular polysaccharide antigenemia in rats with experimental *Staphylococcus aureus* endocarditis. *J Infect Dis* 1987;155:242-246.
21. Arbeit RD, Dunn RM. Expression of capsular polysaccharide during experimental focal infection with *Staphylococcus aureus*. *J Infect Dis* 1987;156:947-952.
22. Verghese A, Catanese A, Arbeit RD. *Staphylococcus aureus* pneumonia in hamsters with elastase-induced emphysema -- the virulence enhancing activity of mucin. *Proc Soc Exp Biol Med* 1988;188:1-6.
23. Leung DY, Ambrosino DM, Arbeit RD, Newton JL, Geha RS. Impaired antibody responses in the hyperimmunoglobulin E syndrome. *J Allergy Clin Immunol* 1988;81:1082-1087.
24. Arthur M, Johnson C, Rubin R, Arbeit RD, Campenelli C, Kim C, Steinbach S, Agarwal M, Wilkinson R, Goldstein R. Molecular epidemiology of adhesin and hemolysin virulence factors among uropathogenic *Escherichia coli*. *Infect Immun* 1989;57:303-313.
25. Arthur M, Campenelli C, Arbeit RD, Kim C, Steinbach S, Johnson C, Rubin R, Goldstein R. Structure and copy number of gene clusters related to the *pap* P adhesin operon of uropathogenic *Escherichia coli*. *Infect Immun* 1989;57:314-321.
26. Agarwal M, Arthur M, Arbeit RD, Goldstein R. Regulation of icosahedral virion capsid size by *in vivo* activity of a cloned gene product. *Proc Natl Acad Sci (USA)* 1990;87:2428-2432.
27. Arthur M, Arbeit RD, Kim C, Beltran P, Crowe H, Steinbach S, Campanelli C, Wilson RA, Selander RK, Goldstein R. Restriction fragment length polymorphisms among uropathogenic *Escherichia coli*: *pap*-related sequences compared with *rrn* operons. *Infect Immun* 1990;58:471-479.
28. Arbeit RD, Arthur M, Dunn RD, Kim C, Selander RK, Goldstein R. Resolution of recent evolutionary divergence among *Escherichia coli* from related lineages: The application of pulsed field electrophoresis to molecular epidemiology. *J Infect Dis* 1990;161:230-235.

29. Lee JC, Liu M-J, Parsonnet J, Arbeit RD. Expression of type 8 capsular polysaccharide and production of toxic shock syndrome toxin-1 among vaginal isolates of *Staphylococcus aureus*. J Clin Microbiol 1990;28:2612-2615.
30. Bruno-Murtha LA, Sedghivaziri MA, Arbeit RD. Crepitant myonecrosis caused by *Klebsiella pneumoniae* in an immunocompromised diabetic patient. J Infect Dis 1990;162:1415-1416.
31. Albus A, Arbeit RD, Lee JC. Virulence of *Staphylococcus aureus* mutants altered in Type 5 capsule production. Infect Immun 1991;59:1008-1014.
32. Xu S, Arbeit RD, Lee JC. Phagocytic killing of encapsulated and microencapsulated *Staphylococcus aureus* by human polymorphonuclear leukocytes. Infect Immun 1992;60:1358-1362.
33. Kreiswirth B, Kornblum J, Arbeit RD, Eisner W, Maslow JN, McGeer A, Low DE, Novick RP. Evidence for a clonal origin of methicillin resistance in *Staphylococcus aureus*. Science 1993;259:227-230.
34. Arbeit RD, Slutsky A, Barber TW, Maslow JN, Niemczyk S, Falkinham JO, O'Connor GT, von Reyn CF. Genetic diversity among strains of *Mycobacterium avium* causing monoclonal and polyclonal bacteremia in patients with Acquired Immunodeficiency Syndrome. J Infect Dis 1993;167:1384-1390.
35. Maslow JN, Mulligan ME, Adams KS, Justis J, Arbeit RD. Bacterial adhesins and host factors in the development and outcome of *E. coli* bacteremia. Clin Infect Dis 1993;17:89-97.
36. Kristjansson M, Green P, Manning HL, Slutsky AM, Brecher SM, von Reyn CF, Arbeit RD, Maslow JN. Molecular confirmation of Bacillus Calmette-Guérin (BCG) as the cause of pulmonary infection following urinary tract installation. Clin Infect Dis 1993;17:228-230.
37. Maslow JN, Brecher S, Adams KS, Durbin A, Loring S, Arbeit RD. The relationship between indole production and the differentiation of *Klebsiella* species: Indole-positive and negative isolates of *Klebsiella* determined to be clonal. J Clin Micro 1993;31:2000-2003.
38. Ward TT, Thomas RG, Fye CL, Arbeit R, Coltman, Jr. CA, Craig W, Dana BW, Finegold SM, Lentino J, Penn RL, Weinberg JB, Chow B Ochi S, and Participating Investigators. Trimethoprim-Sulfamethoxazole prophylaxis in granulocytopenic patients with acute leukemia: evaluation of serum antibiotic levels in a randomized, double-blind, placebo-controlled VA cooperative study. Clin Infect Dis 1993;17:323-332.
39. Johnson CE, Maslow JN, Fattlar DC, Adams KS, Arbeit RD. The role of bacterial adhesins in the outcome of childhood urinary tract infections. Amer J Dis Child 1993;147:1090-1093.
40. von Reyn CF, Barber TW, Arbeit RD, Sox CH, O'Connor GT, Brindle RJ, Gilks CF, Hakkarainen K, Ranki A, Bartholomew C, Tosteson ANA, Mangnusson M. Evidence of previous infection with *M. avium-M. intracellulare* complex among healthy subjects: an international study of dominant mycobacterial skin test reactions. J Infect Dis 1993;168:1553-1558.
41. von Reyn CF, Waddell RD, Eaton T, Arbeit RD, Maslow JN, Barber TW et al. Isolation of *Mycobacterium avium* complex from water in the United States, Finland, Zaire and Kenya. J Clin Micro 1993;31:3227-3230.
42. Maslow JN, Mulligan ME, Arbeit RD. Recurrent *Escherichia coli* bacteremia. J Clin Micro 1994;32:710-714.
43. Tenover FC, Arbeit R, Archer G, Biddle J, Byrne S, Goering R, Hancock G, Hébert GA, Hill B, Hollis R, Jarvis WR, Kreiswirth B, Eisner W, Maslow J, McDougal LK, Miller JM, Mulligan M, Pfaller MA. Comparison of traditional and molecular methods of typing isolates of *Staphylococcus aureus*. J Clin Micro 1994;32:407-415.



44. von Reyn CF, Maslow JN, Barber TW, Falkinham, III, JO, Arbeit RD. Persistent colonization of potable water as a source of *Mycobacterium avium* infection in AIDS. *Lancet* 1994;343:1137-1141.
45. Huebner J, Pier GB, Maslow JN, Muller E, Shiro H, Parent M, Kropec A, Arbeit RD, Goldmann DA. Endemic nosocomial transmission of *Staphylococcus epidermidis* bacteremia strains in a neonatal ICU over a 10-year period. *J Infect Dis* 1994;169:526-531.
46. Slutsky AM, Arbeit RD, Barber TW, Rich J, von Reyn CF, Pieciak W, Barlow MA, Maslow JN. Polyclonal infection due to *Mycobacterium avium* complex in patients with AIDS detected by pulsed field gel electrophoresis of sequential clinical isolates. *J Clin Micro* 1994;32:1773-1778.
47. Kristjánsson M, Samore MH, Gerding DN, DeGirolami PC, Bettin KM, Karchmer AW, Arbeit RD. Comparison of restriction endonuclease analysis, ribotyping, and pulsed field gel electrophoresis for molecular differentiation of *Clostridium difficile* strains. *J Clin Micro* 1994;32:1963-1969.
48. Gilks CF, Brindle RJ, Mwachari C, Batchelor B, Bwayo J, Kimari J, Arbeit RD, von Reyn CF. Disseminated *Mycobacterium avium* infection among HIV-infected patients in Kenya. *J Acquir Immune Defic Syndr* 1995;8:195-198.
49. Proctor RA, van Langevelde P, Kristjánsson M, Maslow JN, Arbeit RD. Persistent and relapsing infections associated with small colony variants of *Staphylococcus aureus*. *Clin Infect Dis* 1995;20:95-102.
50. Morris T, Brecher SM, Fitzsimmons D, Durbin A, Arbeit RD, Maslow JN. A pseudoepidemic of septic arthritis. *Infect Cont Hosp Epidem* 1995;16:82-87.
51. von Reyn CF, Jacobs NJ, Arbeit RD, Maslow JN, Niemczyk S. Polyclonal *Mycobacterium avium* infections in patients with AIDS: Variations in antimicrobial susceptibilities of different strains of *M. avium* isolated from the same patient. *J Clin Micro* 1995;33:1008-1010.
52. Maslow JN, Whittam TS, Gilks CF, Wilson RA, Mulligan ME, Adams KS, Arbeit RD. Clonal relationships among bloodstream isolates of *Escherichia coli*. *Infect Immun* 1995;63:2409-2417.
53. Maslow JN, Brecher S, Gunn J, Durbin A, Barlow MA, Arbeit RD. Persistence and variation of methicillin-resistant *Staphylococcus aureus* strains among individual patients over extended periods of time. *Eur J Clin Micro Infect Dis* 1995;14:282-290.
54. Tenover FC, Arbeit RD, Goering RV, Mickelsen PA, Murray BE, Persing DN, Swaminathan B. Interpreting chromosomal DNA restriction patterns produced by pulsed-field gel electrophoresis: Criteria for Bacterial Strain Typing. *J Clin Micro* 1995;33:2233-2239.
55. Samore MH, Venkataraman L, DeGirolami PC, Arbeit RD, Karchmer AW. Clinical and molecular epidemiology of sporadic and clustered cases of nosocomial *Clostridium difficile* diarrhea. *Amer J Med* 1996;100:32-40.
56. Samore MH, Kristjánsson M, Venkataraman L, DeGirolami PC, Arbeit RD. Comparison of arbitrarily-primed polymerase chain reaction, restriction enzyme analysis and pulse field gel electrophoresis in typing of *Clostridium difficile*. *J Microbiol Methods* 1996;25:215-224.
57. von Reyn CF, Arbeit RD, Tosteson AN, Ristola MA, Barber TW, Waddell R, Sox CH, Brindle RJ, Gilks CF, Ranki A, Bartholomew C, Edwards J, Falkinham JO, O'Connor GT, and the International MAC Study Group. The international epidemiology of disseminated *Mycobacterium avium* complex infection in AIDS. *AIDS* 1996;10:1025-1032.
58. Calderwood SB, Baker MA, Carroll PA, Michel JL, Arbeit RD, Ausubel FM. Use of cleaved, amplified, polymorphic sequences to distinguish strains of *Staphylococcus epidermidis*. *J Clin Micro* 1996;34:2860-2865.
59. Fratazzi C, Arbeit RD, Carini C, Remold HG. Programmed cell death of *Mycobacterium avium* serovar 4-infected human macrophages prevents the mycobacteria from spreading and induces



- mycobacterial growth inhibition by freshly added, uninfected macrophages. *J Immunol* 1997;158:4320-4327.
60. von Reyn CF, Arbeit RD, Yeaman G, Waddell RD. Immunization of healthy adult subjects in the United States with inactivated *Mycobacterium vaccae* administered in a three dose series. *Clin Infect Dis* 1997;24:843-848
  61. Hedderwick SA, Bonilla HF, Barg NL, Arbeit RD, Kauffman, CA. *Mycobacterium avium* complex endocarditis: Spurious diagnosis resulting from laboratory cross-contamination. *Diag Microbiol Infect Dis* 1997;27:147-150
  62. Marsh BJ, von Reyn CF, Arbeit RD, Morin P. Immunization of HIV-infected adults with a three-dose series of inactivated *Mycobacterium vaccae*. *Am J Med Sci* 1997;313:377-383
  63. Samore M, Killgore G, Johnson S, Goodman, Shim J, Venkataraman L, Sambol S, DeGirolami P, Tenover F, Arbeit R, Gerding D. Multicenter typing comparison of sporadic and outbreak *Clostridium difficile* isolates from geographically diverse hospitals. *J Infect Dis.* 1997;176:1233-1238
  64. Marsh BJ, von Reyn CF, Edwards J, Ristola MA, Bartholomew C, Brindle RJ, Gilks CF, Waddell R, Tosteson AN, Pelz R, Sox CH, Arbeit RD and the International MAC Study Group. The risks and benefits of childhood BCG immunization among adults with AIDS. *AIDS* 1997;11:669-672.
  65. Smole SC, Aronson E, Durbin A, Brecher SM, Arbeit RD. Sensitivity and specificity of an improved rapid latex agglutination test for identification of methicillin-sensitive and resistant *Staphylococcus aureus* isolates. *J Clin Micro* 1998;36:1109-1112.
  66. Hadad DJ, Lewi DS, Pignatari ACC, Martins MC, Vitti Jr W, Arbeit RD. Resolution of *Mycobacterium avium* bacteremia following highly active antiretroviral therapy (HAART). *Clin Infect Dis* 1998;26:758-759.
  67. Pestel-Caron M, Arbeit RD. Characterization of IS1245 for strain typing of *Mycobacterium avium*. *J Clin Microbiol* 1998;36:1859-63.
  68. Nguyen MH, Kauffman C, Goodman RP, Squier C, Arbeit RD, Singh N, Wagener M, Yu VL. Nasal carriage of and infection with *Staphylococcus aureus* in HIV-infected patients. *Ann Intern Med* 1999;130:221-225.
  69. Iivanainen E, Northrup J, Arbeit RD, Ristola M, Katila ML, von Reyn CF. Isolation of mycobacteria from indoor swimming pools in Finland. *APMIS* 1999;107:193-200.
  70. Ristola MA, von Reyn CF, Arbeit RD, Soini H, Lumio J, Ranki A, Buhler S, Waddell R, Tostason ANA, Falkinham JO, Sox CH. High rates of disseminated infection due to non-tuberculous mycobacteria among AIDS patients in Finland. *J Infection* 1999;39:61-67.
  71. Johnson D, Waddell RD, Pelton SI, Anna S. Jaeger, Modlin JF, Yagev R, Morin P, Arbeit RD, von Reyn CF. Randomised trial of intradermal *Mycobacterium vaccae* or intradermal hepatitis B immunisation in children with HIV infection. *Vaccine* 1999;17:2583-2587.
  72. Carroll JD, Wallace RC, Keane J, Remold HG, Arbeit RD. Identification of *Mycobacterium avium* DNA sequences that encode exported proteins by using *phoA* gene fusions. *Tuber Lung Dis (Scotland)*, 2000;80:117-30.
  73. Waddell RD, von Reyn CF, Lein AD, Zumla A, Chintu C, Baboo KS, Habbema JDF, Tosteson ANA, Morin P, Tvaroha S, Arbeit RD, Mwinga A, Karagas MR. Safety and immunogenicity of a five-dose series of inactivated *Mycobacterium vaccae* vaccine for the prevention of HIV-associated tuberculosis. *Clin Infect Dis* 2000;30 (suppl 3):S309-315.
  74. Fratazzi C, Manjunath N, Arbeit RD, Carini C, Gerken TA, Ardman B, Remold-O'Donnell E, Remold HG. A macrophage invasion mechanism for mycobacteria implicating the extracellular domain of CD43. *J Exp Med* 2000;192:183-191.

75. Conway GC, Smole SC, Sarracino DA, Arbeit RD, Leopold PE. Phyloproteomics: Species identification of clinical isolates of *Escherichia coli* using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. *J Mol Microbiol Biotechnol* 2001;3:103-12.
76. Michaud S, Menard S, Gaudreau C, Arbeit RD. Comparison of *Sma*I-defined genotypes of *Campylobacter jejuni* examined by *Kpn*I: a population-based study. *J Med Microbiol* 2001;50:1075-1081.
77. Michaud S, Arbeit RD, Gaudreau C. Molecular strain typing of *Campylobacter jejuni* by pulsed field gel electrophoresis in a single day. *Can J Micro* 2001;47:667-699.
78. von Reyn CF, Arbeit RD, Horsburgh CR, Ristola MA, Waddell RD, Travoha SM, Samore M, Hirschhorn LR, Lumio J, Lein AD, Grove MR, Tosteson ANA. Sources of disseminated *Mycobacterium avium* infection in AIDS. *J Infection* 2002;44:166-170.
79. Smole SC, King LA, Leopold PE, Arbeit RD. Sample preparation of gram-positive bacteria for identification by matrix assisted laser desorption/ionization time-of-flight. *J Microbiol Meth* 2002;48:107-115.
80. Smole SC, McAleese F, Ngampasutadol J, von Reyn CF, Arbeit RD. Clinical and epidemiological correlates of genotypes within the *Mycobacterium avium* complex (MAC) defined by restriction and sequence analysis of *hsp65*. *J Clin Micro* 2002;40:3374-3380.
81. Dvorchik BH, Brazier D, DeBruin MF, Arbeit RD. Daptomycin pharmacokinetics and safety following administration of escalating doses once daily to healthy subjects. *Antimicrob Agents Chemo* 2003;47:1318-1323.
82. Vuola JM, Ristola MA, Cole B, Järviluoma A, Tvaroha S, Rönkkö T, Rautio O, Arbeit RD, von Reyn CF. Immunogenicity of an inactivated mycobacterial vaccine for the prevention of HIV-associated tuberculosis: a randomized, controlled trial. *AIDS* 2003;17:2351-2355.
83. Arbeit RD, Maki D, Tally FP, Campanaro E, Eisenstein B, and the Daptomycin 98-01 and 99-01 Investigators. The safety and efficacy of daptomycin in the treatment of complicated skin and skin structure infections. *Clin Infect Dis* 2004;38:1673-81.
84. Dvorchik B, Arbeit RD, Chung J, Liu S, Knebel W, Kastrissios H. Population pharmacokinetic analysis of daptomycin. *Antimicrob Agents Chemo* 2004;48:2799-2807.
85. Fowler, Jr, VC, Sakoulas G, McIntyre LM, Meka V, Arbeit RD, Cabell CH, Stryjewski ME, Eliopoulos GM, Reller LB, Corey GR, Jones T, Lucindo N, Yeaman MR, Bayer AS. *In vitro* resistance to thrombin-induced platelet microbicidal protein-1 is prevalent among bloodstream isolates associated with persistent methicillin-resistant *Staphylococcus aureus* bacteremia. *J Infect Dis*. 2004;190:1140-49.
86. Michaud S, Ménard S, Arbeit RD. Campylobacteriosis, Eastern Townships, Québec. *Emerg Infect Dis*. 2004;10:1844-1847.
87. Deng LL, Humphries DE, Arbeit RD, Carlton LE, Smole SC, Carroll JD. Identification of a novel peptidoglycan hydrolase CwlM in *Mycobacterium tuberculosis*. *Biochem Biophys Acta*. 2005;1747: 57- 66.
88. Michaud S, Menard S, Arbeit RD. Role of real-time molecular typing in the surveillance of *Campylobacter enteritis* and comparison of pulsed-field gel electrophoresis profiles from chicken and human isolates. *J Clin Micro* 2005; 43:1105-1111.
89. Oxman MA, Levin MJ, Johnson GR, Schmader KE, Straus SE, Gelb LD, Arbeit RD, et al. A vaccine to prevent herpes zoster and postherpetic neuralgia in adults. *New Engl J Med*. 2005; 352:2271-4.
90. Arbeit RD. Herpes Zoster and Postherpetic Neuralgia: Public Health Burden and Pharmacotherapy. *The Consultant Pharmacist*. 2006; Supplement A: 6-11.

91. Matee M, Lahey T, Vuola JM, Mtei L, Cole BF, Bakari M, Arbeit RD, Horsburgh CR, Pallangyo K, von Reyn CF. Baseline mycobacterial immune responses in HIV-infected adults primed with bacille Calmette-Guérin during childhood and entering a tuberculosis booster vaccine trial. *J Infect Dis* 2007;195:118-23.
92. Bakari M, Arbeit RD, Mtei L, Lyimo J, Waddell R, Matee M, Cole BF, Tvaroha S, Horsburgh CR, Soini H, Pallangyo K, von Reyn CF. Basis for treatment of tuberculosis among HIV-infected patients in Tanzania: the role of chest x-ray and sputum culture. *BMC Microbiology* 2008; 32 (6 March 2008).
93. Chimara E, Ferrazoli L, Ueky SYM, Durham CAM, Arbeit RD, Leão SC. Reliable identification of mycobacterial species by PCR-Restriction Enzyme Analysis (PRA)-hsp65 in a reference laboratory and elaboration of a sequence-based extended algorithm of PRA-hsp65 patterns. *BMC Microbiology*. 2008;8:48.
94. Pertel PE, Bernardo P, Fogarty C, et al. Effects of prior effective therapy on the efficacy of daptomycin and ceftriaxone for the treatment of community-acquired pneumonia. *Clin Infect Dis*. 2008; 46:1142-1151.
95. Lévesque S, Frost E, Arbeit RD, Michaud S. Multilocus sequence typing of *Campylobacter jejuni* isolates from humans, chickens, raw milk and environmental water in Quebec. *J Clin Microbiol*. 2008; 46:3404-3411.
96. Harbecke R, Oxman MN, Arnold BA, et al. A real-time PCR assay to identify and discriminate among wild-type and vaccine strains of varicella-zoster virus and herpes simplex virus in clinical specimens, and comparison with the clinical diagnoses. *J Med Virol*. 2009; 81(7):1310-22.
97. Weinberg A, Zhang JH, Johnson GR, Oxman MN, Hayward AR, Caulfield MJ, Clair J et al. VZV-Specific Immune Responses to Herpes Zoster in Elderly Participants in a Trial of a Clinically Effective Herpes Zoster Vaccine. *J Infect Dis*. 2009;200-1068-77.
98. St-Pierre K, Levesque S, Frost E, Carrier N, Arbeit RD, Michaud S. Thermotolerant coliforms are not a good surrogate for *Campylobacter* spp. in environmental water. *Appl Environ Microbiol*. 2009;75(21):6736-44.
99. Simberkoff MS, Arbeit RD, Johnson GR, et al. Safety of herpes zoster vaccine in the shingles prevention study: a randomized trial. *Ann Intern Med*. 2010;152(9):545-54.
100. Lahey T, Sheth S, Matee M, et al. Interferon- $\gamma$  responses to mycobacterial antigens protect against subsequent HIV-associated tuberculosis. *J Infect Dis*. 2010;202(8):1265-72.
101. von Reyn CF, Mtei L, Arbeit RD, et al. Prevention of tuberculosis in Bacille Calmette-Guerin-primed, HIV-infected adults boosted with an inactivated whole-cell mycobacterial vaccine. *AIDS*. 2010;24(5):675-85.
102. Lahey T, Arbeit RD, Bakari M, et al. Immunogenicity of a protective whole cell mycobacterial vaccine in HIV-infected adults: A phase III study in Tanzania. *Vaccine* 2010;28:7652-7658.
103. Levesque S, Michaud S, Arbeit RD, Frost EH. High-Resolution Melting System to Perform Multilocus Sequence Typing of *Campylobacter jejuni*. *PLoS ONE*. 2011;6(1):e16167.
104. Levesque S, St-Pierre K, Frost E, Arbeit RD, Michaud S. Determination of the optimal culture conditions for detecting thermophilic campylobacters in environmental water. *J Micro Meth*. 2011;86:82-88.
105. von Reyn CF, Kimambo S, Mtei L, Arbeit RD, et al. Disseminated tuberculosis in HIV infection: ineffective immunity, polyclonal disease and high mortality. *Int J Tuberc Lung Dis* 2011;15:1087-1092.

106. Kabali C, von Reyn CF, Brooks DR, Waddell R, Mtei L, Bakari M, Matee M, Kisali P, Arbeit RD, Horsburgh Jr, CR. Completion of isoniazid preventive therapy and survival in HIV-infected, skin test positive adults in Tanzania. *Int J Tuberc Lung Dis* 2011; 1515-1521
107. Lahey T, Mitchell BK, Arbeit RD, et al. Polyantigenic Interferon- $\gamma$  Responses Are Associated with Protection from TB among HIV-infected Adults with Childhood BCG Immunization. *PLoS ONE*. 2011;6(7):e22074.
108. Levesque S, St-Pierre K, Frost EH, Arbeit RD, Michaud S. Use of amplified-fragment length polymorphism to study the epidemiology of *Campylobacter jejuni* in environmental water and to predict multi-locus sequence typing clonal complexes. *Appl Environ Microbiol*. 2012;78:2470-2474.
109. von Reyn CF, Bakari M, Arbeit RD, Lahey T, Ramadhani A, Egwaga S. New vaccines for the prevention of tuberculosis in human immunodeficiency virus infection. *Int J Tuberc Lung Dis*. 2012;16:718-723.
110. Adams LV, Kreiswirth BN, Arbeit RD, Soini H, Mtei L, Matee M, Bakari M, Lahey T, Wieland-Alter W, Shashkina E, Kurepina N, Driscoll JR, Pallangyo K, Horsburgh CR, von Reyn CF. Molecular epidemiology of HIV-associated tuberculosis in Dar es Salaam, Tanzania: strain predominance, clustering and polyclonal disease. *J Clinical Microbiol*. 2012;50:2645-2650.
111. Noel GJ, Draper M, Hait H, Tanaka SK, Arbeit R. A randomized, evaluator blind, phase 2 study comparing safety and efficacy of omadacycline to linezolid for the treatment of complicated skin and skin-structure infections. *Antimicrob Agents Chemother*. 2012;56:5650-5654.
112. Lahey T; Mackenzie T; Arbeit RD; Bakari M; Mtei L; Matee M; Maro I; Horsburgh CR; Pallangyo K; von Reyn CF. Recurrent tuberculosis risk among HIV-infected adults in Tanzania with prior active tuberculosis. *Clinical Infectious Diseases*. 56(1):151-8, 2013 Jan.
113. Kabali C, Mtei L, Brooks DR, Waddell R, Bakari M, Matee M, Arbeit RD, Pallangyo K, von Reyn CF, Horsburgh CR. Increased mortality associated with treated active tuberculosis in HIV-infected adults in Tanzania. *Tuberculosis* 2013;93(4):461-6.
114. Morrison VA, Oxman MN, Levin MJ, et al. Safety of zoster vaccine in elderly adults following documented Herpes Zoster. *J Infect Dis*. 2013;208:559-563
115. Lahey T, Mackenzie T, Arbeit RD, Bakari M, Mtei L, Matee M, Maro I, Horsburgh CR, Pallangyo K, von Reyn CF. Recurrent tuberculosis risk among HIV-infected adults in Tanzania with prior active tuberculosis. *Clin Infect Dis*. 2013;56(1):151-8.
116. Lahey T, Czechura T, Crabtree S, Arbeit RD, Matee M, Horsburgh CR, MacKenzie T, Bakari M, Pallangyo K, von Reyn CF. Greater pre-existing interferon gamma responses to mycobacterial antigens are associated with lower bacillary load during HIV-associated tuberculosis. *J Infect Dis*. 2013;208:1629-1633.
117. Levesque S, Fournier E, Carrier N, Frost E, Arbeit RD, Michaud S. Campylobacteriosis in Urban Versus Rural Areas: A Case-Case Study Integrated with Molecular Typing to Validate Risk Factors and to Attribute Sources of Infection. *PLoS ONE* 2013;8(12):e83731.
118. Suarez-Farinas M, Arbeit R, Jiang W, et al. Suppression of molecular inflammatory pathways by Toll-like receptor 7, 8, and 9 antagonists in a model of IL-23-induced skin inflammation. *PLoS ONE* 2013;8(12):e84634.
119. Lahey T; Mackenzie T; Arbeit RD; Bakari M; Mtei L; Matee M; Maro I; Horsburgh CR; Pallangyo K; von Reyn CF. Recurrent tuberculosis risk among HIV-infected adults in Tanzania with prior active tuberculosis. *Clinical Infectious Diseases*. 56(1):151-8, 2013 Jan.
120. Ristola M; Arbeit RD; von Reyn CF; Horsburgh CR Jr. Isolation of *Mycobacterium avium* from Potable Water in Homes and Institutions of Patients with HIV Infection in Finland and the United States. *BioMed Research International*. 2015:713845, 2015.



121. Lahey T; Laddy D; Hill K; Schaeffer J; Hogg A; Keeble J; Dagg B; Ho MM; Arbeit RD; von Reyn CF. Immunogenicity and Protective Efficacy of the DAR-901 Booster Vaccine in a Murine Model of Tuberculosis. . PLoS ONE [Electronic Resource]. 11(12):e0168521, 2016.
122. von Reyn CF; Lahey T; Arbeit RD; Landry B; Kailani L; Adams LV; Haynes BC; Mackenzie T; Wieland-Alter W; Connor RI; Tvaroha S; Hokey DA; Ginsberg AM; Waddell R. Safety and immunogenicity of an inactivated whole cell tuberculosis vaccine booster in adults primed with BCG: A randomized, controlled trial of DAR-901. PLoS ONE [Electronic Resource]. 12(5):e0175215, 2017.
123. Balak DM; van Doorn MB; Arbeit RD; Rijneveld R; Klaassen E; Sullivan T; Brevard J; Thio HB; Prens EP; Burggraaf J; Rissmann R. IMO-8400, a toll-like receptor 7, 8, and 9 antagonist, demonstrates clinical activity in a phase 2a, randomized, placebo-controlled trial in patients with moderate-to-severe plaque psoriasis. Clinical Immunology. 174:63-72, 2017 Jan.
124. De Carvalho NFG, Pavan F, Sato DN, Leite CQF, Arbeit RD, Chimara E. Genetic correlates of clarithromycin susceptibility among isolates of the *Mycobacterium abscessus* group and the potential clinical applicability of a PCR-based analysis of *erm*(41). J Clin Microbiol 2017; in press

## MONOGRAPHS

1. Molecular Methods for Bacterial Strain Typing. CLSI document MM11-A (Approved Guideline). Clinical Laboratories Standards Institute, Wayne, PA. 2007.
2. Surveillance for Methicillin-Resistant *Staphylococcus aureus*: Principles, Practices, and Challenges; A Report. CLSI document X07-R. Clinical Laboratories Standards Institute, Wayne, PA. 2010.

## BOOK CHAPTERS

1. Arbeit RD, Henkart PA, Dickler HB. Lymphocyte binding of heat-aggregated and antigen-complexed immunoglobulin. In: Bloom B, David J, eds. In vitro methods in cell-mediated immunity. Vol II. New York: Academic Press, 1976:143-154.
2. Levin MJ, Zaia JA, Preblud SR, Arbeit RD. Human immunoglobulin in the prevention and treatment of viral disease. In: Hydegger UE, ed. Immunohematopathology. New York: Academic Press, 1981:299-311.
3. Maslow JN, Slutsky A, Arbeit RD. Application of pulsed field gel electrophoresis to molecular epidemiology. In: Persing DH et al., ed. Diagnostic Molecular Microbiology. Washington DC: American Society for Microbiology, 1993:563-572.
4. Arbeit RD. Laboratory procedures for the epidemiologic analysis of microorganisms. In: Murray PR et al. ed., Manual of Clinical Microbiology, 6th edition. Washington, DC: American Society for Microbiology, 1995:190-208.
5. Arbeit RD. *Staphylococcus aureus* in ENT infections. In Johnson JT and Yu V, ed. Infectious Diseases and Antimicrobial Therapy of the Ears, Nose and Throat. Orlando: W. B. Saunders Co. 1997:162-165.
6. Arbeit RD. Laboratory procedures for the epidemiologic analysis of staphylococci. In: Archer GL and Crossley KB, eds. Staphylococci and Staphylococcal Diseases. New York, Churchill Livingstone, 1997:253-286.
7. Arbeit, RD. The application of pulsed field gel electrophoresis to strain typing of mycobacteria. In: Molecular Mycobacteriology. Ollar RA and Connell ND, ed. New York, Marcel Dekker, Inc., 1999:169-193.
8. Arbeit RD. Laboratory procedures for the epidemiologic analysis of microorganisms. In: Murray PR et al. ed., Manual of Clinical Microbiology, 7th edition. Washington, DC: American Society for Microbiology, 1999:116-137.

## INVITED REVIEWS AND EDITORIALS

1. Mulligan ME, Arbeit RD. Epidemiologic and clinical utility of typing systems for differentiating among strains of methicillin-resistant *Staphylococcus aureus*. *Infect Control Hosp Epidemiol* 1991;12:20-28.
2. Maslow JN, Mulligan ME, Arbeit RD. Molecular epidemiology: application of contemporary techniques to the typing of microorganisms. *Clin Infect Dis* 1993;17:153-164.
3. von Reyn CF, Arbeit RD. Case definitions for infective endocarditis. *Am J Med* 1994;96:220-222. [editorial]
4. Maslow JN, Arbeit RD. Molecular epidemiology for the clinician: I. Description and characteristics of selected techniques. *Infect Dis Clin Practice* 1995;4:128-133.
5. Arbeit RD. The pathogenesis, treatment, and prevention of *M. avium* infection in AIDS. *prn Notebook* 1995;1:17-22.
6. von Reyn CF, Pestel M, Arbeit RD. Clinical and epidemiologic implications of polyclonal infection due to *Mycobacterium avium* complex. *Res Microbiol* 1995;146:24-30.
7. Arbeit RD. Molecular epidemiology for the clinician: II. Interpretation and Application of Molecular Typing. *Infect Dis Clin Practice* 1996;5:260-264.
8. Tenover FC, Arbeit RD, Goering RV. How to select and interpret strain typing methods for epidemiologic studies of bacterial infections. Molecular Typing Working Group of the Society of Healthcare Epidemiology of America. *Infect Cont Hosp Epi.* 1997;18:426-439.
9. van Soolingen D, Arbeit RD. Dealing with variation in molecular typing of *Mycobacterium tuberculosis*: low-intensity bands and other challenges. *J Med Microbiol* 2001;749-751.

## LETTERS

1. Arbeit RD. Online systems for searching Medline. *Ann Intern Med* 1986;104:442.
2. Kristjánsson M, Arbeit RD. *Mycobacterium ulcerans* and osteomyelitis. *N Engl J Med* 1993;329:582.
3. von Reyn CF, Brown ST, Arbeit RD. Rifabutin prophylaxis against *Mycobacterium avium* complex infection. *N Engl J Med* 1994;330:437.
4. Maslow JN, Mulligan ME, Arbeit RD. [Reply to:] Bacterial adhesins and host factors. *Clin Infect Dis* 1994;18:473-474.
5. Arbeit RD, Maslow JN, Mulligan ME. [Reply to:] Polymerase chain reaction mediated genotyping in bacterial epidemiology. *Clin Infect Dis* 1994;18:1018-1019.
6. von Reyn, CF, Arbeit RD, Friedland GH, Crumpacker CS, III. [Re:] Infective Endocarditis. *Clin Infect Dis* 1994;19:368-369.
7. von Reyn, CF, Arbeit RD. [Re:] New criteria for the diagnosis of infective endocarditis. *Clin Infect Dis* 1995;21:449.
8. Arbeit RD, Goodman RP, Snider GL. Electric razors as a potential vector for viral hepatitis. *N Engl J Med* 2000;342:1840.
9. Hadad DJ, Smole SC, Martins MC, Chimara E, Ueki SYM, Palhares MCA, Arbeit RD, Pignatari ACC. Disseminated *Mycobacterium genavense* in an HIV-infected patient from South America. *Int J Tuberculosis* 2003;7:502-3.



### Summary of Clinical Trials Experience

Phase: Indication	Drug	Trial Activity / Responsibilities	Result	Time Period; Employer
Phase I: Pharmacokinetics	Daptomycin (Cubicin®)	PK studies to support NDA; participated in data analysis, including population PK.	Participated in analyzing data and in writing posters and publications	Jan 2001 to Jan 2003; Cubist Pharmaceuticals, Lexington, MA
Phase III: Complicated Skin and Skin Structure Infections	Daptomycin (Cubicin®)	For two pivotal Phase III trials: developed analysis plan, closed trial, cleaned data, participated in data analysis.	Trials were successful; wrote clinical study reports; wrote poster and publications	Jan 2001 to Jan 2003; Cubist Pharmaceuticals, Lexington, MA
Phase III: Community-acquired Pneumonia (hospitalized)	Daptomycin (Cubicin®)	For two pivotal Phase III trials: performed post-trial analysis to determine basis for variability in data and failure to meet endpoints	Presented analysis to management and prepared clinical study reports and memorandum to FDA	Jan 2001 to Jan 2003; Cubist Pharmaceuticals, Lexington, MA
Phase III: Infective Endocarditis and Bacteremia	Daptomycin (Cubicin®)	Designed registration study, negotiated design and endpoints with FDA, selected CRO, led investigator meetings, initiated study. [This was the first registration trial for Endocarditis in 15 years.]	Study successfully completed Spring 2005; indication approved Spring 2006. This was the first antibiotic approved for bacteremia under FDA guidance issued in 1999; first antibiotic approved for endocarditis since mid-1980s.	Jan 2001 to Jan 2003; Cubist Pharmaceuticals, Lexington, MA
NDA	Daptomycin (Cubicin®)	Wrote Efficacy and Safety sections of NDA; edited microbiology section, contributed to PK section	NDA submitted on-time and approved (fast-track).	Jan 2001 to Jan 2003; Cubist Pharmaceuticals, Lexington, MA
PreClinical Development	PTK 0796	Participated in analysis of preclinical safety, efficacy, and pharmacokinetics. Prepared summary of preclinical work performed by Paratek; served as principal liaison to "big pharma" partner; member of their Project Team.	Completed preclinical phase and successfully initiated Phase I.	Feb 2003 to Dec 2004; Paratek Pharmaceuticals, Boston, MA
Phase I: Single Dose Escalation, IV	PTK 0796	Prepared regulatory submission (CTA to MRHA in UK); wrote Protocol, prepared Investigator's Brochure, selected CRO, prepared CRFs, did site initiation and training, present for first and several later dose groups, analyzed safety and PK data as available, prepared Clinical Study Report.	First in man, 27 June 2005; completed August 2005; 8 cohort completed though highest dose planned.	Jan 2005 to Oct 2005; Paratek Pharmaceuticals, Boston, MA
Phase I : Single dose escalation, oral	PTK 0796	Prepared regulatory submission (CTA to MRHA in UK); wrote Protocol, updated Investigator's Brochure, selected CRO, did site initiation and training, analyzed safety and PK data.	initiated Feb 2006; completed June 2006; 8 cohorts completed, including two at higher doses under an approved amendment.	Nov 2005 to June 2006; Paratek Pharmaceuticals, Boston, MA

Phase: Indication	Drug	Trial Activity / Responsibilities	Result	Time Period; Employer
Phase I: Multiple dose escalation. IV	PTK 0796	Prepared regulatory submission (CTA to MRHA in UK), wrote Protocol, selected CRO, did site initiation and training, present for key cohorts at and above therapeutic dose, analyzed safety and PK data.	Initiated Mar 2006, completed October 2006; 5 cohorts completed, including 2 cohorts using a second drug product formulation under an approved amendment.	Jan 2006 to Oct 2006; Paratek Pharmaceuticals, Boston, MA
Phase I: Multiple Dose Escalation, Oral	PTK 0796	Prepared regulatory submission (CTA to MRHA in UK), wrote Protocol, selected CRO, did site initiation and training, analyzed safety and PK data as available.	Initiated September 2006; completed October 2006.	May 2006 to Oct 2006; Paratek Pharmaceuticals, Boston, MA
Phase I: Single Dose Women and Elderly PK	PTK 0796	Prepared regulatory submission (IND to FDA), wrote Protocol, analyzed safety and PK data as available.	Initiated April 2007; completed July 2007	Jan 2007 to July 2007; Paratek Pharmaceuticals, Boston, MA
Phase II: complicated skin and skin structure	PTK 0796	Wrote protocol and Investigators Brochure, prepared submission to FDA, selected CRO and sites, ran Investigator's meeting, served as primary medical monitor.	Initiated July 2007; last pt enrolled (219 patients) Dec 2007; top level results Feb 2008	Dec 2006 to Feb 2008; Paratek Pharmaceuticals, Boston, MA
Phase I: Formulation Development Program	PTK 0796	Prepared, oversaw and analyzed results for a series of studies designed to identify optimal specifications for oral formulation and for oral dosing regimen.	Successfully met FDA mandated target exposure for proceeding with development of oral formulation and with Phase III	May to Nov 2008 Paratek Pharmaceuticals, Boston, MA
Phase I: Single Dose IV & oral Women vs Men	PTK 0796	Prepared regulatory submission (IND to FDA), wrote Protocol, analyzed safety and PK data as available.	Performed Dec 2007	Dec 2007; Paratek Pharmaceuticals, Boston, MA
Phase II – III: End of Phase 2 Meeting	PTK 0796	Prepared Clinical Questions for FDA for End of Phase 2 meeting; prepared package submitted, including pivotal protocols for two indications and Sponsor's position on Clinical questions; at meeting served as primary spokesperson for Sponsor	Meeting held July 2008; key positions accepted by Agency; requested revised protocol based on new guidance from Advisory committee meetings	May – July 2008 Paratek Pharmaceuticals, Boston, MA
Phase III Type A Meeting	PTK 0796	Prepared revised protocol for proposed indication for NDA; prepared meeting submission package; at meeting served as primary spokesperson for Sponsor	Meeting held July 2008; successfully presented and defended key aspects of protocol at variance with Agency's initial position; revised protocol accepted as submitted by Sponsor.	Dec 2008 – Feb 2009 Paratek Pharmaceuticals, Boston, MA
International Regulatory Meetings	PTK 0796	Prepared meeting submission packages for France, UK and Germany regulatory authorities; at meetings served as primary spokesperson for Sponsor	Meetings held December 2008, January and March 2009;	Dec 2008 – Mar 2009 Paratek Pharmaceuticals, Boston, MA

Phase: Indication	Drug	Trial Activity / Responsibilities	Result	Time Period; Employer
Phase III	PTK 0796	Primary responsibility for pivotal registration trials for initial indication – including protocol development, CRO oversight, training of CRO ran investigator's meeting for training of site study personnel Chaired Investigator Meetings for US (Feb & Apr 2009) and EU (June 2009)	US study – 50 sites, target 790 patients, initiated 4 April 2009 International trial – 70 sites, 9 countries, to begin Aug 2009	May 2008 – June 2009 Paratek Pharmaceuticals, Boston, MA
Phase 1b/2a	IMO-2125	Assumed responsibility for ongoing US protocols. Based on analysis of initial efficacy data, revised protocols to add additional cohorts and regimens to address pharmacodynamic questions.	US Study – initially 6 sites, target 50 patients; added 6 sites to accommodate additional patients at faster enrollment. Clinical trial completed Q4 2010; CSR in preparation.	August 2009 to April 2011 Idera Pharmaceuticals, Cambridge, MA
Phase 1b/2a	IMO-2125	Assumed responsibility for ongoing overseas protocol. Revised protocol to add additional dose cohorts and regimens to address pharmacodynamic questions. Expanded study to additional countries to address regulatory delays and slow recruitment at original sites. Conducted site visits to all overseas sites, including central pharmacy and laboratory. Participate in weekly CRO progress calls.	Ex-US study – initially 4 sites in two countries (FR, RU), added 3 additional sites in Hungary. Clinical trial completed Q3 2010; CSR in preparation.	August 2009 to Nov 2010 Idera Pharmaceuticals
Phase 2 (two trials, different patient populations)	IMO-2125	Prepared protocol, ran CRO selection process, attended kick-off meeting, participate in weekly CRO progress calls. Coordinating separate CROs for clinical and data management to improve flexibility and address specific needs of trial. Visited over 50% of proposed clinical sites in Central and Eastern Europe.	All aspects of trial in preparation for target start end of Q1 2011. Trial held week first patient screened due to new non-clinical data.	April 2010 to present Idera Pharmaceuticals
Phase 1 (single dose; 4 wk multiple dose)	IMO-3100	Primary responsibility for clinical portion of IND; contributed to writing presentation of preclinical studies. Wrote IND opening protocol and Investigator's Brochure. Primary responsibility for clinical trial; was present for start of First-in-Man trial. Performed ongoing analyses of study safety data.	Single site Phase 1 unit in US First-in-man single dose escalation trial initiated 17 Jan 2010; clinical portion of 4 wk multiple dose trial completed 29 Sep 2010. CSR completed.	August 2009 to May 2010 Idera Pharmaceuticals
Phase 2 (moderate to severe Plaque Psoriasis)	IMO-3100	Coordinated selection of target indication for POC trial. Prepared clinical portion of IND to new division. Primary responsibility for clinical trial. Prepared protocol, ran CRO selection process, attended kick-off meeting, participate in weekly CRO progress calls. Coordinating separate CROs for clinical and data management to improve flexibility and address specific needs of trial.	Trial conducted at 11 sites, enrolled 44 patients treated for 4 weeks; trial completed in 8 months; top level results and press release at 4 weeks after last patient last visit.	April 2012 to Dec 2012 Idera Pharmaceuticals

Phase: Indication	Drug	Trial Activity / Responsibilities	Result	Time Period; Employer
Phase 1 (single dose escalation; 4 wk multiple dose escalation)	IMO-8400	Primary responsibility for clinical portion of IND; contributed to writing presentation of preclinical studies. Wrote IND opening protocol and Investigator's Brochure. Primary responsibility for clinical trial; was present for start of First-in-Man trial. Performed ongoing analyses of study safety data.	Single site Phase 1 unit in US Entire trial (3 sequential single dose cohorts; 2 sequential 4-week multiple dose cohorts) completed in 6 months. CSR in preparation.	Nov 2012 to May 2013 Idera Pharmaceuticals
Phase 2 (moderate to severe Plaque Psoriasis)	IMO-8400	Primary responsibility for clinical trial. Prepared protocol, ran CRO selection process, attended kick-off meeting, participate in weekly CRO progress calls. Coordinating separate CROs for clinical conduct and for monitoring.	Trial initiated ex-US the same month Phase 1 studies completed in US. Trial plus extension cohort at higher dose completed on schedule	May 2013 to June 2014 Idera Pharmaceuticals
Phase 1/2 Waldenstrom's Macroglobulinemia Diffuse Large B cell Lymphoma (DLBCL)	IMO-8400	Primary responsibility for clinical trial. Prepared protocol, ran CRO selection process, attended kick-off meeting, participate in weekly CRO progress calls. Coordinating separate CROs for clinical monitoring and for data management. Initiated and maintained contact with investigators at key academic sites.	IND opening protocol in new FDA division. Second protocol in related indication (DLBCL) developed and submitted within 3 months	October 2013 to January 2015 Idera Pharmaceuticals
IND and Phase 1b/2a Renal Cell Carcinoma	X4P-001	Attended pre-IND meeting at FDA. Primary responsibility for preparing clinical portion of IND, protocol, IB and contributing to pharmacology and toxicology Primary responsibility for clinical trial. Prepared protocol, ran CRO selection process, attended kick-off meeting, participate in weekly CRO progress calls. Initiated and maintained contact with investigators at key academic sites.	IND prepared in 4 months; safe to proceed letter received within 30 days. IND opening protocol: SIV visits conducted and dose escalation initiated. Second protocol (different combination therapy) prepared, accepted to IND, and opened.	February 2015 to July 2016 X4 Pharmaceuticals
External non-clinical studies	X4P-001	Primary responsibility for review of proposed or solicited non-clinical studies at academic sites and CRO. Reviewed and contributed to experimental protocols; oversight of research in progress; maintained relationships with academic investigators.	Studies opened at multiple academic labs and CROs. Results presented at two academic conferences within following year.	September 2015 to July 2016 X4 Pharmaceuticals
Phase 1b Melanoma	X4P-001	Primary responsibility for clinical trial. Prepared protocol, oversaw CRO start-up activities, participate in weekly CRO progress calls.	Protocol accepted to IND without revision. Study opened at multiple sites.	December 2015 to July 2016 X4 Pharmaceuticals
Phase 2/3 WHIM Syndrome	X4P-001	[WHIM Syndrome is an ultra-rare genetic disorder characterized by mutations in CXCR4 that render the receptor hyper-active and over-responsive to physiologic levels of its ligand – CXCL12.] Primary responsibility for clinical trial. Established relationships with key investigators. Prepared protocol, contributed to IND, oversaw CRO selection process.	IND successful; accepted within 30 days with minimal protocol revisions.	December 2015 to July 2016 X4 Pharmaceuticals

Phase: Indication	Drug	Trial Activity / Responsibilities	Result	Time Period; Employer
Prevention of Herpes Zoster in Elderly	Zoster Vaccine (Zostavax®) [Merck]	Member of planning committee (1994-95), site investigator (1998-2001), member of Executive Committee (1996-present), member of Writing Committee (2004- present)	Largest US vaccine trial in adults (n=34,000; 15 sites across the US); successfully completed; published in NEJM within 6 months of unblinding.	1994-2000, Associate Chief of Staff for Research, VA Boston; 2001-2005, while employed as above
Prevention of Tuberculosis in BCG-primed, HIV-infected Adults	SRL172 atypical <i>Mycobacterium</i> (agar-grown, heat-killed)	Collaborator in Phase I and II trials in US, Finland and Africa (1994 to 2000); member of Executive Committee for Phase III trial in Tanzania (1999-2005) Consultant to reformulating vaccine for large-scale manufacture and conducting Phase 1 immunogenicity and safety studies.	Largest contemporary trial of a TB vaccine (n=2000); successfully completed, results published.	1994-2000, Associate Chief of Staff for Research, VA Boston; 2001-2013, while employed as above
IND and Phase 1 Prevention of Tuberculosis in BCG-primed Adults	DAR-901 atypical mycobacteria (broth-grown, heat-killed)	New vaccine product prepared from same seed stock as SRL172 using a broth- grown scalable manufacturing method. Consultant to preparation IND for new product, including IND-enabling studies, IND-opening FIM protocol, and IB. Consultant to protocol initiation and execution, member of dose-escalation review committee.	Phase 1 dose escalation trial in healthy volunteers and in HIV-infected volunteers conducted and completed. CSR prepared.	2013 to 2016, while employed as above
Phase 2 Prevention of Tuberculosis Infection in BCG-primed Adolescents	DAR-901 atypical mycobacteria (broth-grown, heat-killed)	Consultant to design and protocol development of novel Phase 2 trial for new TB vaccine – prevention of infection as detected by IGRA conversion in BCG- primed adolescents in Tanzania (high endemic rate of tuberculosis)	Protocol completed, accepted by Tanzania FDA, initiated, in progress	2015 to present, while employed as above



**IN THE HEALTH CARE ALTERNATIVE DISPUTE RESOLUTION OFFICE**

TAMMIE FRALEY, Individually, and as  
Personal Representative of the ESTATE OF  
JESSICA HAYNES, *et al.*,

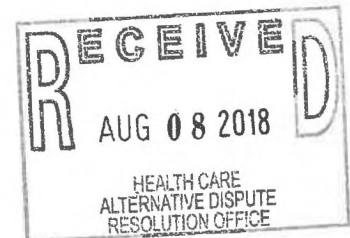
Case No.

Claimants,

v.

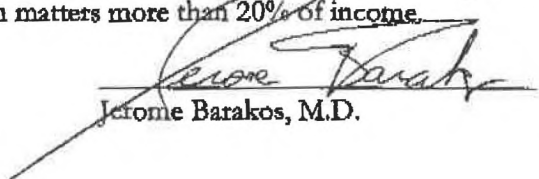
MERITUS MEDICAL CENTER, INC., *et*  
*al.*,

Health Care Providers.

**CERTIFICATE OF QUALIFIED EXPERT**

I, Jerome Barakos, M.D., do hereby certify and affirm that:

1. I am Board Certified in radiology by the American Board of Radiology and have had clinical experience in the field of neuro-radiology, specifically within the past five years of the date of the events which form the basis of this litigation. My Attesting Report and *curriculum vitae* are attached hereto.
2. I have reviewed medical records and films pertaining to Jessica Haynes regarding health care services rendered at Berkeley Memorial Hospital (City Hospital), Meritus Medical Center, War Memorial Hospital, and Ruby Memorial Hospital. Prior to reviewing any medical records in this matter, I conducted an independent "blind review" of the radiology studies presented to me.
3. Based upon my education, training, and experience in radiology as well as the radiology studies, medical records and information provided in this case, it is my opinion, within a reasonable degree of medical probability that the radiologists at Meritus Medical Center violated the standard of care. The radiologists' names who are attached to the reports in question are Gregory S. Zimmerman, M.D.; Jennifer K. Flaim, D.O.; Narasim Murthy, M.D.; and Paul C. Marinelli, M.D. Dr. Flaim was the radiologist whose reading of the June 6, 2016 was below the standard of care. The criticisms of the other doctors are more specifically laid out in my attesting report.
4. I do not spend more than 20% of my professional time on medical legal matters, nor is my compensation from such matters more than 20% of income.

DATE: 07-MAR-2018  
Jerome Barakos, M.D.



**IN THE HEALTH CARE ALTERNATIVE DISPUTE RESOLUTION OFFICE**

TAMMIE FRALEY, Individually, and as  
Personal Representative of the ESTATE OF  
JESSICA HAYNES, *et al.*,

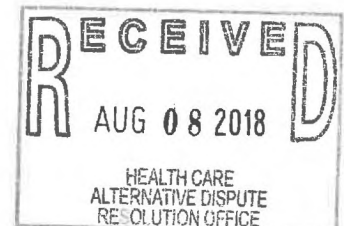
Case No.

Claimants,

v.

MERITUS MEDICAL CENTER, INC., *et*  
*al.*,

Health Care Providers.

**ATTESTING EXPERT REPORT**

My name is Jerome Barakos, M.D. and I am board certified in Radiology, and currently practice Radiology in California. My *curriculum vitae* is attached hereto.

It is my opinion to within a reasonable degree of medical probability that the radiology studies conducted at Meritus Medical Center of Jessica Haynes demonstrated the progressive development of a brain abscess that the standard of care required to have been definitively identified and documented no later than on June 6, 2016 when Jennifer Flaim, D.O. interpreted the MR-Brain/Stem W/Wo Contrast study. The failure to have definitively ruled in a brain abscess at this time and any time subsequent was a violation of the standard of care by Dr. Flaim. It is unclear if Dr. Flaim discussed this patient with the radiology staff at Meritus, Associated Radiologists, and/or Diagnostic Imaging Services. To the extent that any other radiologists were involved in the impression documented and/or concurred with this assessment, he/she/they too would have also failed to have met the standard of care.

Additionally, it is further my opinion that had a repeat MRI study been conducted between June 6 and her discharge from Meritus Medical Center, more likely than not within a reasonable degree of medical certainty, it would have shown findings that were atypical in the presentation of a stroke and more typical with an abscess such as continued growth from June 6 and a more definitive ring enhancement. Such findings would have further demonstrated that this lesion was an abscess and infection based and would have ruled out a stroke.

In order to arrive at the opinions formulated in this matter, I conducted a blind review of the following radiology studies:

1. ERCT/CTA Head and Neck on 6/3/16
2. CT/Head Scan WO Cont on 6/4/16
3. MR/MR-Brain/Stem W/WO on 6/4/16
4. MR/MRA Head W/O on 6/5/16



5. MR-Brain/Stem W/WO on 6/6/16
6. CT w/o contrast conducted on 6/15/16; and
7. CT Head W/WO Contrast on 6/19/16.

It was not until after I formulated my opinions upon these studies that I reviewed the radiology reports that were provided to me in a separate, sealed envelope. I was then provided the relevant medical records, which further supported my opinions.

My blind review of the radiology studies led to the following opinions:

The initial CT study conducted on June 4, 2016 demonstrates very little by way of diagnostic pathology. The MRI study of that same day, however, indicated to me that there must have been a suspicion for a brain lesion of some sort. There is in fact a lesion, which I subsequently learned from the records was documented by the radiologist. The lesion at this point in time is of the size and nature that would require a differential diagnosis to include a tumor, a demyelinating process of some nature, and/or a hemorrhage. At that point in time, the lesion did not demonstrate evidence of ring enhancement.

On June 5, 2016, the MRA demonstrated no vascular abnormalities to suggest a stroke, or other vascular pathology.

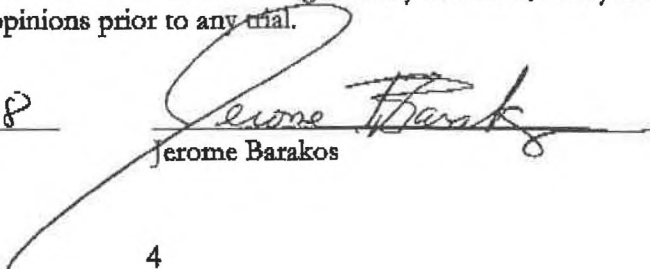
On June 6, 2016, the MRI demonstrates clear interval growth of the lesion with striking ring enhancing features. As of this time, the lesion appears consistent with an abscess and the standard of care required that a brain abscess be placed on the differential diagnosis and clinic correlation be advised.

The subsequent CT Scans conducted on June 15 and June 19 demonstrated continued growth of the lesion and associated ring enhancement, thereby, strengthening the suspicion of a brain abscess.

In addition to the radiology studies, the clinical presentation of this patient further supports the diagnosis of a brain abscess. Specifically, this patient presented with an abnormal headache, poor dental hygiene, and a prior history of drug abuse. She then underwent a lumbar puncture, which demonstrated an extremely high presence of white blood cells. In a female patient in her thirties with such complaints and conditions, the standard of care requires that an abscess to be on the differential diagnosis. The standard of care also requires that such a patient be considered to have an infection until proven otherwise. The standard of care required such in this case.

This is a preliminary report and if new information is brought to my attention, I may revise, expand, or otherwise amend my opinions prior to any trial.

DATE: 07-MAR-2018

  
Jerome Barakos

## CURRICULUM VITAE

**Jerome Antonio Barakos, M.D.**



Business address & phone: California Pacific Medical Center  
2nd FL/Department of Radiology  
2333 Buchanan Street  
San Francisco, California 94115  
Office: (415) 600-3232  
Voicemail/ Pager: (415) 232-5002

E-mail address & fax: E-mail: barakosmd@gmail.com  
Fax (415) 387-0659  
P.O. Box 475432  
San Francisco, CA 94147-5432

Citizenship: U.S.A.

### **EDUCATION**

<b>College</b> 7/1978 - 6/1982	University of California, San Diego Revelle College, B.A. <i>Magna Cum Laude</i>
<b>Medical School</b> 7/1982 - 6/1986	University of Southern California, School of Medicine Medical Degree
<b>Medicine Internship</b> 7/1986 - 6/1987	University of California, San Francisco Medical Center
<b>Radiology Residency</b> 7/1987 - 6/1990	University of California, San Francisco Medical Center Alexander R. Margulis, M.D. Radiology Chairman
<b>Neuroradiology Fellowship</b> 7/1990 - 6/1992	University of California, San Francisco Medical Center David Norman, M.D. Neuroradiology Chairman James Barkovich, M.D. Director Pediatric Neuroradiology

### **HONORS AND AWARDS**

1978-82	Awarded University Scholastic Honors University of California, San Diego
1985	Alpha Omega Alpha Medical Honor Society
1986	Phi Kappa Phi National Honor Society
1986	C.V. Mosby Co. Outstanding Academic Achievement Scholarship Award
1986	USC All University Research Fellowship Award
1988	Radiology Inservice Exam: 99th National Percentile
1989	Radiology Inservice Exam: 99th National Percentile
1990	Awarded UCSF Scholars Fellowship
1991	Appointed Chief Neuroradiology Fellow

### **BOARD CERTIFICATION AND MEDICAL LICENSURE**

- 1996     Diplomate, Certificate of Added Qualifications in Neuroradiology, The American Board of Radiology  
1991     Diplomate, The American Board of Radiology  
1988     Medical License: California  
              G 063097     DEA: BB3297214  
1987     Diplomate, National Board of Medical Examiners  
              Part I, II and III.

### **CURRENT PROFESSIONAL SERVICE**

#### **Scientific manuscript peer reviewer:**

Selected as a scientific manuscript peer reviewer of research articles in the following journals and publications:

#### **Scientific manuscript peer reviewer for the AMERICAN JOURNAL OF ROENTGENOLOGY**

Journal of the American Roentgen Ray Society, founded in 1900, is the first and oldest radiology society in the United States dedicated to the goal of the advancement of medicine through the science of radiology and its allied sciences.

#### **Scientific manuscript peer reviewer for the AMERICAN JOURNAL OF NEURORADIOLOGY**

Journal of the American Society of Neuroradiology

#### **Scientific manuscript peer reviewer for the NEW ENGLAND JOURNAL OF MEDICINE**

#### **Scientific manuscript peer reviewer for the Neuromodulation: Technology at the Neural Interface**

Journal of the International Neuromodulation Society  
Official Journal of the International Functional Electrical Stimulation Society

### **PROFESSIONAL SOCIETY APPOINTMENTS & SERVICE**

#### **Past President: San Francisco Bay Radiological Society**

- Secretary and Treasurer 2000-2001
- President Elect 2001-2002
- President** 2002-2004

#### **Past President: San Francisco Neurological Society**

- Secretary and Treasurer 2001-2002
- President Elect 2002-2003
- President** 2003-2004
- Board of Directors 2004-2008

#### **Association of the Clinical Faculty Administrative Council: University of California, San Francisco**

- Secretary 1997-1998
- Representative for the discipline of Radiology 1996-1998

#### **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

American Society of Pediatric Neuroradiology	
American Roentgen Ray Society	
American Medical Association	
California Radiological Society	since 1992
American Society of Neuroradiology	since 1992 (Senior Member)
American Society of Head and Neck Radiology	since 1992
San Francisco Neurological Society	since 1992
San Francisco Radiological Society	since 1992
American College of Radiology	since 1991
Western Neuroradiological Society	since 1991 (Senior Member)
Radiologic Society of North America	since 1987
Phi Kappa Phi National Honor Society	since 1986
Alpha Omega Alpha Medical Honor Society	since 1985

#### **ACADEMIC APPOINTMENTS**

7/1990-6/1992	<b>Clinical Instructor in Neuroradiology</b> Department of Radiology, Neuroradiology Section University of California, San Francisco
7/1992-2004	<b>Assistant Clinical Professor</b> Department of Radiology, Neuroradiology Section University of California, San Francisco

#### **CLINICAL APPOINTMENTS**

07/1992-Present	<b>Director of Neuroimaging</b> Department of Radiology California Pacific Medical Center San Francisco, CA
07/2003-2007	<b>Chairman, Department of Nuclear Medicine</b> California Pacific Medical Center San Francisco, CA
07/2014-Present	Neuroimaging Advisor: Sutter Neuroscience Research Consortium: Executive Committee member: Sutter West Bay Division, Sutter East Bay Division, Sutter Peninsula Coastal Division, and Sutter Sacramento / Sierra and Central Valley

#### **PUBLICATIONS 1986-2006 listed below:**

#### **PUBLICATIONS 2007-2013 beginning on page 13:**

1. Fein G, Landman B, Tran H, **Barakos J**, et al. "Statistical parametric mapping of brain morphology: Sensitivity is dramatically increased by using brain-extracted images as inputs." Neuroimage. 2006



Jan 24; PMID: 16442817

2. Mueller SG, Laxer KD, **Barakos JA**, et al. "Metabolic characteristics of cortical malformations causing epilepsy." *J Neurol*. 2005 Sep;252(9):1082-92. Epub 2005 Apr 29. PMID: 15868069
3. Mueller SG, D Laxer K, **Barakos JA**, Cashdollar N, Flenniken DL, Vermathen P, Matson GB, Weiner MW. "Identification of the epileptogenic lobe in neocortical epilepsy with proton MR spectroscopic imaging." *Epilepsia*. 2004 Dec;45(12):1580-9. PMID: 15571516
4. Fein G, Di Sclafani V, Taylor C, Moon K, **Barakos J**, Tran H, Landman B, Shumway R. "Controlling for premorbid brain size in imaging studies: T1-derived cranium scaling factor vs. T2-derived intracranial vault volume." *Psychiatry Res*. 2004 Jul 30;131(2):169-76. PMID: 15313523
5. Marx M, Wack JP, Baker EL, Stevens SK, **Barakos JA**. "Ovarian protection by occlusion of uteroovarian collateral vessels before uterine fibroid embolization." *J Vasc Interv Radiol*. 2003 Oct;14(10):1329-3332. PMID: 14551281
6. Marx M, Wack J, Baker E, **Barakos J**. Re: Treatment of a splenic artery aneurysm with use of a stent-graft. *J Vasc Interv Radiol*. 2002 Dec;13(12):1282. PMID: 12471196
7. **Barakos JA**, Dillon WP. "CT-guided fine needle aspiration of foramen ovale lesions." *Radiology*, February 1992; 182(2): 573 - 575. •Selected for publication in **YEAR BOOK of Neuroradiology 1992**.
8. **Barakos JA**, Dillon WP, Chew WM. "Contrast enhanced fat suppression MR imaging of the orbit, skull base and pharynx." *Radiology*, April 1991;179(1):191-198. •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1992**. •Selected for publication in **YEAR BOOK of Neuroradiology 1992**.
9. **Barakos JA**, D'Amour PG, Dillon WP, Newton TH. "Trigeminal sensory neuropathy caused by cervical disc herniation." *American Journal of Neuroradiology*, May - June 1990; 11(3):609.
10. **Barakos JA**, Goldberg HI, Brown JJ, Gilbert TJ. "Comparison of computed tomography and magnetic resonance imaging in the evaluation of focal hepatic lesions." *Gastrointestinal Radiology*, 1990; 15(2):93-101 . •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1992**.
11. **Barakos JA**, Mark AS, Dillon WP, Norman D. "MR imaging of acute transverse myelitis and AIDS myelopathy." *Journal of Computer Assisted Tomography*, 1990 January-February; 14(1):45-50.
12. **Barakos JA**, Brown JJ, Higgins CB. "High signal intensity lesions of the chest in MR imaging." *Journal of Computer Assisted Tomography*, 1989 September-October; 13(5):797-802. •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1991**.
13. **Barakos JA**, Brown JJ, Higgins CB. "Magnetic resonance imaging of secondary cardiac and paracardiac lesions." *American Journal of Roentgenology*, 1989 July; 153(1):47-50.
14. **Barakos JA**, Colletti PM, Siegel ME, Ralls PW, Halls JM. "Kock continent ileal urinary reservoir. Anatomy and potential pitfalls of radionuclide imaging." *Clinical Nuclear Medicine*, 1987 September; 12(9):744-750.
15. **Barakos JA**, Ralls PW, Lapin SA, Johnson MB, Radin DR, Colletti PM, Boswell WD Jr, Halls JM. "Cholelithiasis: evaluation with CT." *Radiology*, 1987 February; 162(2) :415-418.
16. **Barakos JA**, Jeffrey RB Jr, McAninch JW, Bottles K. "Computerized tomography diagnosis of

diffuse intraperitoneal metastases after retroperitoneal lymphadenectomy for testicular carcinoma." *Journal of Urology*, 1986 September; 136(3):680-681.

17. **Barakos JA**, Jeffrey RB Jr, Federle MP, Wing VW, Laing FC, Hightower DR. "CT in the management of periappendiceal abscess." *American Journal of Roentgenology*, 1986 June; 146(6):1161-1164. •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1988**.
18. Yee T, **Barakos JA**, Knight RT. "High dose praziquantel for refractory neurocysticercosis: A case report with clinical and MRI follow-up." *Western Journal of Medicine*, February 1999.
19. Marx M, Wack JP, **Barakos JA**, Andrews BT. "Extravasation from power injection near previous arteriotomy site." *JVIR*, 1998 September-October; 9(5): 857-858.
20. Taylor SL, **Barakos JA**, Harsh GR, Wilson CB. "MR imaging of tuberculum sellae meningiomas: preventing preoperative misdiagnosis as pituitary macroadenoma." *Neurosurgery*, 1992 October; 31(4): 621-627.
21. Weber W, Neumann C, **Barakos JA**, Peterson S, Steinbach L, Genant H. "MR imaging characteristics of lateral tibial (Segond) fractures." *Radiology*, 1991 September; 80(3):731-734.
22. Brown JJ, **Barakos JA**, Higgins CB. "Magnetic resonance imaging of cardiac and paracardiac masses." *Journal of Thoracic Imaging*, 1989 April; 4(2):58-64.
23. Ralls PW, **Barakos JA**, Kaptein EM, Friedman PE, Fouladian G, Boswell WD, Halls J, Massry SG. "Renal biopsy-related hemorrhage: frequency and comparison of CT and sonography." *Journal of Computer Assisted Tomography*, 1987 November-December; 11(6):1031-1034. •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1989**.
24. Colletti PM, **Barakos JA**, Ralls PW, Siegel ME, Halls JM. "Hepatobiliary scintigraphy and scintiangiography in abdominal trauma." *Clinical Nuclear Medicine*, 1987 November; 12(11):901-909.
25. Colletti PM, **Barakos JA**, Siegel ME, Ralls PW, Halls JM. "Enterogastric reflux in suspected acute cholecystitis." *Clinical Nuclear Medicine*, 1987 July; 12(7):533-535.
26. Ralls PW, **Barakos JA**, Skinner DG, Boswell WD Jr, Radin DR, Colletti PM, Halls JM. "Imaging of the Kock continent ileal urinary reservoir." *Radiology*, 1986 November; 161(2):477-483. •Selected for publication in **YEAR BOOK of Diagnostic Radiology 1988**.

**Letters to the editor:**

Imes RK, **Barakos J**. Presumed bilateral lateral geniculate nuclei ischemia.  
*AJNR Am J Neuroradiol*. 2006 Jan;27(1):9-10; author reply 10-1. PMID: 16418347

## **INVITED PAPERS**

**Jerome Barakos, MD** "PET Adds to Neuroimaging's Arsenal". Medscape Radiology: coverage of 39th Annual Meeting of the American Society of Neuroradiology.

April 23 - 27, 2001, Boston, Massachusetts.

Authors: Jerome Barakos, MD; William G. Bradley Jr, MD, PhD, FACR; Blake Johnson, MD

**Barakos JA.** "Advances in Magnetic Resonance Imaging of the Head and Neck". *Topics in Magnetic Resonance Imaging*, 1994; 6(3).

**Barakos JA.** "Principles of Contrast Use in Head & Neck MR Imaging". *ACR (American College of Radiology) Publication*. 1993 September; 70th Annual ACR Meeting & Categorical Course.

**Barakos JA, Dillon WP.** "Imaging of the Neck". *Current Opinion in Radiology*, 1991 February; 3(1): 93-100.

## **BOOK CHAPTERS**

Dillon WP, **Barakos JA.** "The Pharynx and Oral Cavity". In: ***Magnetic Resonance Imaging of the Body, Second Edition***. 1992, edited by Higgins CB, Hricak H, Helms CA. Raven Press, Ltd, New York.

**Barakos JA.** "White Matter Disease and Encephalopathies". In: ***Fundamentals of Diagnostic Radiology***. First edition: 1993, edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**Barakos JA.** "Diseases of the Head and Neck". In: ***Fundamentals of Diagnostic Radiology***. First edition: 1993, edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**Barakos JA.** "White Matter Disease and Encephalopathies". **Second Edition: 1998** ***Fundamentals of Diagnostic Radiology***. 1998 edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**Barakos JA.** "Diseases of the Head and Neck". **Second Edition: 1998** ***Fundamentals of Diagnostic Radiology***. 1998 edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**Barakos JA.** "White Matter Disease and Encephalopathies". **Third Edition: 2006** ***Fundamentals of Diagnostic Radiology***. Plus Integrated Content Website (4 vol. set). 1584 pages **2006** edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**Barakos JA.** "Diseases of the Head and Neck". **Third Edition: 2006** ***Fundamentals of Diagnostic Radiology***. Plus Integrated Content Website (4 vol. set). 1584 pages **2006** edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**BOOK CHAPTERS Continued**

Lindan C, Gaensler E, Barakos JA. **"Pediatric Neuroimaging". Fourth Edition: 2011 *Fundamentals of Diagnostic Radiology*.** Plus Integrated Content Website (4 vol. set). 2011 edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

Barakos JA and Purcell D. **"White Matter Disease and Encephalopathies". Fourth Edition: 2011 *Fundamentals of Diagnostic Radiology*.** Plus Integrated Content Website (4 vol. set). 2011 edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

Barakos JA and Purcell D. **"Diseases of the Head and Neck". Fourth Edition: 2011 *Fundamentals of Diagnostic Radiology*.** Plus Integrated Content Website (4 vol. set). 2011 edited by Clyde Helms M.D. and William Brant M.D. Raven Press, Ltd, New York.

**The Brant and Helms Solution: Fundamentals of Diagnostic Radiology**, Fourth Edition, Plus Integrated Content Website (4 vol. set).

**Publisher:** Lippincott Williams & Wilkins; Fourth Edition (June 1, 2011)

**Co-Section Editor: Neuroradiology Section**

# **SCIENTIFIC PRESENTATIONS AT NATIONAL MEETINGS**

1. **Neuroradiological and Neuro-histopathological Findings Associated with Domoic Acid Exposure in *Zalophus californianus* (California Sea Lion): Animal Model for Toxicity Induced Mesial Temporal Sclerosis in Humans.**  
**Barakos, J.**<sup>1</sup>•Haulena, M. A.<sup>2</sup>•Gulland, F. M. D.<sup>2</sup>•Goldstein, T.<sup>2</sup>•Colegrove, K.<sup>3</sup>•Dennison, S.<sup>2,4</sup>•Zabka, T.<sup>2</sup>•Thomas, K.<sup>5</sup>•Spangenberg, J. V.<sup>6,3</sup>  
<sup>1</sup>California Pacific Medical Center, San Francisco, CA, <sup>2</sup>Marine Mammal Center, Sausalito, CA, <sup>3</sup>School of Veterinary Medicine, UC Davis, Davis, CA, <sup>4</sup>Wildlife Health Center, UC Davis, Davis, CA, <sup>5</sup>Moss Landing Marine Laboratory, Moss Landing, CA, <sup>6</sup>Aquarium of the Bay, San Francisco, CA.  
 NER Foundation Symposium 2006 & ASNR 44th Annual Meeting, San Diego Convention Center, April 29 - May 5, 2006, San Diego, California  
 (Supported by federal grants from The National Oceanic and Atmospheric Administrations (NOAA) Oceans and Human Health Initiative (OHHI). A federal program investigating critical linkages between oceans and human health.)
2. **Barakos JA**, Dillon WP. "CT-guided fine needle aspiration of lesions of the foramen ovale." Radiologic Society of North America 77th Annual Assembly, Chicago, Illinois, December 1991.
3. **Barakos JA**, Dillon WP, Chew WM. "Fat-saturation MR imaging of the head and neck." American Society of Neuroradiology 28th Annual Meeting, Los Angeles, California, March 1990.
4. **Barakos JA**, Neumann CH, Steinbach LS. "MR imaging of Second fractures and related lateral tibial condyle injuries." Radiologic Society of North America 75th Annual Assembly, Chicago, Illinois, November 1989.
5. **Barakos JA**, DeMarco RD, Clark OH, Higgins CB. "MR imaging of recurrent medullary thyroid carcinoma." Radiologic Society of North America 75th Annual Assembly, Chicago, Illinois, November 1989.
6. **Barakos JA**, D'Amour PG, Dillon WP, Newton TH. "CT findings of craniofacial chondrosarcoma." American Society of Head and Neck Radiology 20th Annual Conference, Toronto, Canada, May 1989.
7. **Barakos JA**, D'Amour PG, Dillon WP, Newton TH. "Craniofacial fibrous dysplasia: CT and MR Gd-DTPA findings." American Society of Head and Neck Radiology 20th Annual Conference, Toronto, Canada, May 1989.
8. **Barakos JA**, Goldberg HI, Brown JJ, Gilbert TJ. "Comparison of 0.35 T MR imaging versus CT in the detection of hepatic lesions." Radiologic Society of North America 74th Annual Assembly, Chicago, Illinois, December 1988.
9. **Barakos JA**, Colletti PM, Siegel ME, Ralls PW, Halls JM. "Kock continent ileal urinary reservoir: Anatomy and potential pitfalls of radionuclide imaging." Radiologic Society of North America 72nd Annual Assembly, Chicago, Illinois, December 1986.
10. **Barakos JA**, Ralls PW, Skinner DG, Boswell WD Jr, Radin DR, Colletti PM, Halls JM. "Radiology of the Kock continent ileal urinary reservoir." Radiologic Society of North America 71st Annual Assembly, Chicago, Illinois, December 1985.
11. **MRI Features of Asymptomatic Amyloid Related Imaging Abnormalities-Edema (ARIA-E)**



Identified at Baseline in AD Study Cohorts, and MR Artifacts Which Mimic ARIA-E

J.Barakos, MD (1,2), C.Carlson, PhD (3), W.Estergard, PharmD (3), J.Oh, PhD (1), J.Suhy, PhD (1), C.Jack, MD (4), E.Siemers, MD (3)

(1) Synarc, San Francisco, CA ; (2) California Pacific Medical Center, San Francisco, CA ;

(3) Lilly Research Laboratories, Indianapolis, IN ; (4) Mayo Clinic, Rochester, MN

**Clinical Trials on Alzheimer's Disease, November 3-5, 2011, San Diego, California**

"Vasogenic Edema in the setting of  $\beta$ -amyloid lowering therapy, adverse event: what is it and how is it detected?"

Suhy J, Barakos J, Oh J, Carlson C, Estergard W, Jack CR Jr, Siemers E.

**10<sup>th</sup> Alzheimer's and Parkinson's Disease Congress – AD/PD. Barcelona, Spain, March 9-13, 2011**

Current Industry Neuroimaging Experience in Clinical Trials: What are the critical challenges and standardization efforts used within the organization, could they be applied in clinical practice and if not who not, what is missing?

Jerome Barakos, M.D.

**Research and Standardization on Alzheimer's Disease Conference. RASAD Conference March 27-29, 2012 Melbourne, Australia**

**MR Imaging of ARIA (Amyloid-Related Imaging Abnormalities) in Patients Treated with Bapineuzumab**

Jerome Barakos, R. Sperling<sup>1</sup>, S. Salloway<sup>2</sup>, C. Jack<sup>3</sup>, A. Gass<sup>4</sup>, J. Fiebach<sup>5</sup>, D. Tampieri<sup>6</sup>, D. Melancon<sup>6</sup>, Y. Miaux<sup>7</sup>, G. Rippon<sup>8</sup>, R. Black<sup>8</sup>, Y. Lu<sup>9</sup>, H. R. Brashear<sup>9</sup>, M. Arrighi<sup>9</sup>, K. Morris<sup>9</sup>, M. Grundman<sup>10</sup>

<sup>1</sup>Brigham & Women's Hospital, Boston, MA, USA; <sup>2</sup>Butler Hospital, Providence, RI, USA; <sup>3</sup>Mayo Clinic Minnesota, Rochester, MN, USA; <sup>4</sup>University Hospital Mannheim; Bioclinica, Mannheim, Germany; <sup>5</sup>Center for Stroke Research, Charite - Universitätsmedizin, Berlin, Germany; <sup>6</sup>NeuroRx Research, Montreal, Quebec, Canada; <sup>7</sup>Synarc, San Francisco, CA, USA; <sup>8</sup>Pfizer Inc., Collegeville, PA, USA; <sup>9</sup>Janssen Alzheimer Immunotherapy R&D, South San Francisco, CA, USA; Global R&D Partners, San Diego, CA, USA

Email: barakosmd@gmail.com

**36th European Society of Neuroradiology Annual Meeting, Edinburgh, Scotland 20-23, 2012**

#### **SCIENTIFIC PRESENTATIONS AT REGIONAL MEETINGS**

1. "Fat-saturation MR imaging vs spin-echo MR imaging in the evaluation of head and neck malignancy." **Barakos JA**, Dillon WP, Kaplan MJ, Brescia RJ. Western Neuroradiology Society 21st Annual Conference, Monterey, California, October 1989.
2. "Contrast-Enhanced Fat-suppression MR imaging of the head and neck: Pitfalls and Solutions." **Barakos JA**, Dillon WP. Western Neuroradiology Society 24th Annual Conference, San Francisco, California, October 1992

#### **ABSTRACTS NATIONAL MEETINGS**

1. Imaging More with Less: Whole Brain 64-Slice Stroke CT Imaging Using Currently Available Volume Shuttle (VS) and Novel Volume Helical Shuttle (VHS) Brain Perfusion Does Not Increase Radiation Exposure. Jack Rose, Qui Luong, Nobl Barazangi, Derk Purcell, Amy Huang, Shirley Chen, Jerome Barakos, David Tong, Kirk Moon. **62nd American Academy of Neurology Annual Meeting, April 10 through April 17, 2010, at the Metro Toronto Convention Centre in Toronto, ON, Canada.**
2. Whole-Brain CT Perfusion (CTP) Using a Novel Volume Helical Shuttle (VHS) Technique on a Conventional 64-Slice CT Scanner: Utility in Routine Stroke Evaluation. Nobl Barazangi, Albert Lu, Jack Rose, Shirley Chen, Derk Purcell, Amy Huang, Jerry Barakos, David Tong. **62nd American Academy of Neurology Annual Meeting, April 10 through April 17, 2010, at the Metro Toronto Convention Centre in Toronto, ON, Canada.**
3. CEREBELLAR PNEUMATOSIS IN A LIVE CALIFORNIA SEA LION (*ZALOPHUS CALIFORNIANUS*) N. Pussini<sup>1\*</sup>, E. Montie<sup>1, 2</sup>, W. Van Bonn<sup>1</sup>, S. E. Dennison<sup>3</sup>, D. J. Greig<sup>1</sup>, J. Barakos<sup>4</sup>, F. M. D. Gulland<sup>1</sup>, <sup>1</sup>The Marine Mammal Center, 2000 Bunker Road, Sausalito, CA <sup>2</sup>College of Marine Science, University of South Florida, FL <sup>3</sup> Sam Silverman and Associates, 10 Liberty Ship Way #102, Sausalito, CA <sup>4</sup> California Pacific Medical Center, University of California, San Francisco, CA. **41st Annual Conference International Association for Aquatic Animal Medicine (IAAAM). Vancouver, BC, Canada. May 8 - 12, 2010**
4. Neuroanatomy and Brain Structure Volumes of a Live California Sea Lion (*Zalophus californianus*) from Magnetic Resonance Images: Utility in Determining Effects of Domoic Acid. Eric W. Montie<sup>1</sup>; Nicola Pussini<sup>2</sup>; Gerald Schneider<sup>3</sup>; Thomas W.K. Battey<sup>4</sup>; Sophie Dennison<sup>2,5</sup>; Jerome Barakos<sup>6</sup>; Frances Gulland<sup>2</sup>  
<sup>1</sup>College of Marine Science, University of South Florida, FL, USA; <sup>2</sup>The Marine Mammal Center, Sausalito, CA, USA; <sup>3</sup>Dept. of Brain and Cognitive Sciences, MIT, Cambridge, MA, USA; <sup>4</sup>Eckerd College, Galbraith Marine Science Center, St. Petersburg, FL, USA; <sup>5</sup>School of Veterinary Medicine, University of Wisconsin, Madison, WI, USA; <sup>6</sup>California Pacific Medical Center, University of California, San Francisco, CA, USA. **40th Annual Conference International Association for Aquatic Animal Medicine (IAAAM). San Antonio, Texas. May 2009.**
5. Initial Experience with Combined 64-Slice CT Perfusion (CTP) and CT Angiography (CTA) in Routine Practice. Potential and Pitfalls. Authors: David Tong, Jack Rose, Jackie Phan, Ann Bedenk, **Jerome Barakos**, Daniel McDermott, San Francisco, CA. Session Info: Poster Session III: Cerebrovascular Imaging (4:00 PM-7:00 PM). Presentation Time: Tuesday, April 28, 2009. **American Academy of Neurology 61<sup>st</sup> Annual Meeting, Seattle May 2009.**

6. Risk Factors and Clinical Course Associated with Vasogenic Edema in a Phase II Trial of Bapineuzumab. Authors: Reisa A. Sperling, Boston, MA, Stephen Salloway, Providence, RI, Nick C. Fox, London, United Kingdom, **Jerome Barakos**, Kristen Morris, Gordon Francis, San Francisco, CA, Ronald S. Black, Collegeville, PA, Michael Grundman, San Diego, CA, Bapineuzumab 201 Clinical Trial Investigators, San Francisco, CA. Session Info: Scientific Sessions: Aging and Dementia: Treatment (3:45 PM-5:00 PM). Presentation Time: Wednesday, April 29, 2009, 3:45 pm. **American Academy of Neurology 61<sup>st</sup> Annual Meeting, Seattle May 2009.**
  
7. "TLE Without Mesial Temporal Sclerosis (TLE-No) Shows Different Patterns Of Cortical Thinning Than TLE with Mesial Temporal Sclerosis (TLE-MTS)". M. W. Weiner, S. G. Mueller, I. Cheong, **Jerome Barakos**, N. Schuff, P. Garcia, K. D. Laxer. **American Epilepsy Society 62nd Annual Meeting, 2nd Biennial North American Regional Epilepsy Congress, December 5-9, 2008 Seattle Washington.**
  
8. "Initial Experience with Combined 64-slice CT Perfusion (CTP) And CT Angiography (CTA) In Routine Practice. Potential and Pitfalls". David Tong, Jack Rose, **Jerome Barakos**, et al. **International Stroke Conference 2008. New Orleans, LA.**
  
9. "Increasing Thrombolytic Treatment Rates: Results Utilizing Revised Treatment Criteria and A Multidisciplinary Stroke Education Program". David C Tong, Jack Rose, Jeffrey Thomas, Jackie Phan, Ann Bedenk, **Jerome Barakos**, et al. **International Stroke Conference 2008. New Orleans, LA.**
  
10. "PET's Role in Multidisciplinary Treatment of Colon and Rectal Cancer. 2005 Gastrointestinal Cancers Symposium". S. R. Bunker, **J. A. Barakos**. Abstract - No. 199 2005 Gastrointestinal Cancers Symposium - Category: Colon and Rectum - Multidisciplinary Treatment **American Society of Clinical Oncology (ASCO). 13-17 May 2005 Location: Orlando, FL, USA. The American Society of Clinical Oncology (ASCO) 41st annual meeting.**
  
11. "Long-term neurologic effects of exposure to Domoic acid in stranded California Sea Lions". Haulena et al. **PROCEEDINGS American Association Zoo Veterinarians, American Association of Wildlife Veterinarians, Wildlife Disease Association JOINT CONFERENCE, San Diego, 2004 SF 996 A44 2004 231.**  
 Martin Haulena, DVM, MSc, 1\* Christopher Dold, DVM, 1,2 Katie Colegrove, DVM, 2 Linda J. Lowenstine, DVM, PhD, Dipl ACVP, 2 Kate Thomas, 3 James T. Harvey, MS, PhD, 3 Jerome A. Barakos, MD, 4 Jill V. Spangenberg, DVM, PhD, 5 Nathan Cashdollar, BA, 6 Denise Greig, MSc, 1 and Frances M.D Gulland, VetMB, MRCVS, PhD1  
 1The Marine Mammal Center, 1065 Fort Cronkhite, Sausalito, CA 94965 USA; 2The Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis, CA 95616 USA; 3Moss Landing Marine Laboratories, 8272 Moss Landing Road, Moss Landing, CA 95039 USA; 4California Pacific Medical Center, University of California, San Francisco, CA 94115 USA; 5Aquarium of the Bay, San Francisco, CA 94133 USA; 6Department of Radiology, University of California, DVA Medical Center, San Francisco, CA 94121 USA
  
12. "Marine Biotoxins Program, NOAA. Domoic acid intoxication: California sea lions as sentinels of human health and models of disease". Gulland, F. M.; DeLong, R.; Brodie, E.; Van Dolah, F.; Leighfield, T.; Lowenstine, L. J.; Melin, S.; **Barakos, J. ERF 2005 Conference (Estuarine Research Federation).**
  
13. "Basal Ganglia Damage After Perinatal Hypoxia-Ischemia." Korobkin R, **Barakos JA**.  
 Our objective was to correlate specific clinical findings in cerebral palsy children with imaging abnormalities of basal ganglia and relate the imaging abnormalities to timing of study.

**First Conjoint Meeting of the Child Neurology Society and the International Child Neurology Association, San Francisco, California, October 1994. 119th Annual Meeting of the American Neurological Association, San Francisco, California, 9-12 October 1994. Page 515-516 Annals of Neurology Vol 36, No 3, September 1994**

14. "Cerebral aspergillosis: pre and post contrast MR imaging features." Kollias SS, Baker LL, **Barakos JA**, Newton TH, Rosenblum M. **Western Neuroradiology Society 23rd Annual Conference**, Laguna Niguel, California, October 1991.
15. "MR imaging characteristics of pituitary macroadenomas and tuberculum meningiomas: a comparative study." Taylor S, Harsch GR, Wilson CB, **Barakos JA**. **American Association of Neurologic Surgeons 59th Annual Assembly**, New Orleans, Louisiana, April 1991.
16. "MR imaging of sinus barotrauma." D'Amour PG, Rippe DJ, **Barakos JA**, Dillon WP, Newton TH. **American Society of Head and Neck Radiology 20th Annual Conference**, Toronto, Canada, May 1989.
17. "Nutritional requirements of *Treponema pallidum* in a cell-free system." Norris SJ, **Barakos JA**, Sell S. **American Society for Microbiology, 82nd Annual Conference**, Atlanta, Georgia, May 1982.

## **RECENT POSTER PRESENTATIONS**

### **MR Imaging of ARIA (Amyloid-Related Imaging Abnormalities) in Patients Treated with Bapineuzumab**

Jerome Barakos, R. Sperling<sup>1</sup>, S. Salloway<sup>2</sup>, C. Jack<sup>3</sup>, A. Gass<sup>4</sup>, J. Fiebach<sup>5</sup>, D. Tampieri<sup>6</sup>, D. Melançon<sup>6</sup>, Y. Miaux<sup>7</sup>, G. Rippon<sup>8</sup>, R. Black<sup>8</sup>, Y. Lu<sup>9</sup>, H. R. Brashear<sup>9</sup>, M. Arrighi<sup>9</sup>, K. Morris<sup>9</sup>, M. Grundman<sup>10</sup>

<sup>1</sup>Brigham & Women's Hospital, Boston, MA, USA; <sup>2</sup>Butler Hospital, Providence, RI, USA; <sup>3</sup>Mayo Clinic Minnesota, Rochester, MN, USA; <sup>4</sup>University Hospital Mannheim; Bioclinica, Mannheim, Germany; <sup>5</sup>Center for Stroke Research, Charité - Universitätsmedizin, Berlin, Germany; <sup>6</sup>NeuroRx Research, Montreal, Quebec, Canada; <sup>7</sup>Synarc, San Francisco, CA, USA; <sup>8</sup>Pfizer Inc., Collegeville, PA, USA; <sup>9</sup>Janssen Alzheimer Immunotherapy R&D, South San Francisco, CA, USA; Global R&D Partners, San Diego, CA, USA

Email: barakosmd@gmail.com

**12th International Stockholm/Springfield Symposium on Advances in Alzheimer Therapy.  
9-12 May, 2012, Stockholm, Sweden**

### **MR Imaging Features of ARIA (Amyloid-Related Imaging Abnormalities) in Patients Treated in Phase 2 Clinical Studies of Bapineuzumab**

Barakos J, Sperling R, Salloway S, Jack C, Gass A, Fiebach J, Tampieri D, Melançon D, Miaux Y, Rippon G, Black R, Lu Y, Brashear HR, Arrighi HM, Morris K, Grundman M.

**5<sup>th</sup> Clinical Trials Conference on Alzheimer's Disease, Forum Grimaldi - Monte Carlo.  
CTAD Oct 29-31, 2012**

### **Initial Experience with Combined 64-slice CT perfusion (CTP) and CT Angiography (CTA) in Routine Practice. Potential and Pitfalls.**

DC Tong, <sup>1,2,3</sup> JC Rose, <sup>1,2,3</sup> J Thomas, <sup>1,2,3</sup> **J Barakos**, <sup>1,5</sup> D McDermott, <sup>1,4</sup>  
J Phan, <sup>1,3</sup> A Bedenk<sup>1,2,3</sup>

CALIFORNIA PACIFIC MEDICAL CENTER (CPMC) COMPREHENSIVE STROKE CARE CENTER, <sup>1</sup>  
CPMC CENTER FOR STROKE RESEARCH, <sup>2</sup> CPMC DEPARTMENT OF NEUROSCIENCES, <sup>3</sup> CPMC  
DEPARTMENT OF EMERGENCY MEDICINE, <sup>4</sup> CPMC DEPARTMENT OF RADIOLOGY <sup>5</sup>

**American Stroke Association, International Stroke Conference 2008, New Orleans, LA.**

**Stroke (Journal of the American Heart Association) 2008; 39; 527-729. ISSN: 1524-4628.**

### **Increasing Thrombolytic Treatment Rates: Results Utilizing Revised Treatment Criteria And A Multidisciplinary Stroke Education Program.**

DC Tong, <sup>1,2,3</sup> JC Rose, <sup>1,2,3</sup> J Thomas, <sup>1,2,3</sup> **J Barakos**, <sup>1,2,5</sup> D McDermott, <sup>1,2,4</sup> J Phan, <sup>1,2,3</sup> A  
Bedenk<sup>1,2,3</sup>

CALIFORNIA PACIFIC MEDICAL CENTER (CPMC) COMPREHENSIVE STROKE CARE CENTER, <sup>1</sup>  
CPMC CENTER FOR STROKE RESEARCH, <sup>2</sup> CPMC DEPARTMENT OF NEUROSCIENCES, <sup>3</sup> CPMC  
DEPARTMENT OF EMERGENCY MEDICINE, <sup>4</sup> CPMC DEPARTMENT OF RADIOLOGY <sup>5</sup>

**American Stroke Association, International Stroke Conference 2008, New Orleans, LA.**

**Stroke (Journal of the American Heart Association) 2008; 39; 527-729. ISSN: 1524-4628.**

### **Is Estimated Weight Accurate for rt-PA Dosing in Acute Stroke?**

DC Tong, <sup>1,2,3</sup> JC Rose, <sup>1,2,3</sup> J Thomas, <sup>1,2,3</sup> **J Barakos**, <sup>1,2,5</sup> D McDermott, <sup>1,2,4</sup> J Phan, <sup>1,2,3</sup> A  
Bedenk<sup>1,2,3</sup>



CALIFORNIA PACIFIC MEDICAL CENTER (CPMC) COMPREHENSIVE STROKE CARE CENTER,1  
CPMC CENTER FOR STROKE RESEARCH,2 CPMC DEPARTMENT OF NEUROSCIENCES,3 CPMC  
DEPARTMENT OF EMERGENCY MEDICINE,4 CPMC DEPARTMENT OF RADIOLOGY 5  
**American Stroke Association, International Stroke Conference 2008, New Orleans, LA.**  
**Stroke (Journal of the American Heart Association) 2008; 39; 527-729. ISSN: 1524-4628.**

Thalamo-Cortical Epileptogenic Networks In TLE With (TLE-MTS) And Without Mesial Temporal Sclerosis (TLE-no). J. Barakos, S. G. Mueller, I. Cheong, N. Schuff, P. Garcia, M. W. Weiner, K. D. Laxer.  
**American Epilepsy Society 62<sup>nd</sup> Annual Meeting, 2<sup>nd</sup> Biennial North American Regional Epilepsy Congress, December 5-9, 2008 Seattle Washington.**

TLE WITHOUT MESIAL TEMPORAL SCLEROSIS (TLE-NO) SHOW DIFFERENT PATTERNS OF CORTICAL THINNING THAN TLE WITH MESIAL TEMPORAL SCLEROSIS (TLE-MTS)  
Authors: Michael Weiner, Susanne Mueller, Ian Cheong, Jerome Barakos, N. Schuff, Paul Garcia and Kenneth Laxer  
**American Epilepsy Society 62<sup>nd</sup> Annual Meeting, 2<sup>nd</sup> Biennial North American Regional Epilepsy Congress, December 5-9, 2008 Seattle Washington.**

In Vivo Subfield Volumetry Using 4T High Resolution MRI In TLE With (TLE-MTS) And Without Hippocampal Sclerosis (TLE-no). S. G. Mueller, K. D. Laxer, J. Barakos, P. Garcia, I. Cheong, N. Schuff, M. W. Weiner.  
**American Epilepsy Society 62<sup>nd</sup> Annual Meeting, 2<sup>nd</sup> Biennial North American Regional Epilepsy Congress, December 5-9, 2008 Seattle Washington.**

Initial Experience with Combined 64-Slice CT Perfusion (CTP) and CT Angiography (CTA) in Routine Practice. Potential and Pitfalls. David Tong, Jack Rose, Jackie Phan, Ann Bedenk, Jerome Barakos, Daniel McDermott, San Francisco, CA  
**American Academy of Neurology: 2009 61st Annual Meeting**  
**April 25–May 2 Seattle, WA**

**Risk Factors and Clinical Course Associated with Vasogenic Edema in a Phase II Trial of Bapineuzumab**

Authors: Reisa A. Sperling, Boston, MA, Stephen Salloway, Providence, RI, Nick C. Fox, London, United Kingdom, Jerome Barakos, Kristen Morris, Gordon Francis, San Francisco, CA, Ronald S. Black, Collegeville, PA, Michael Grundman, San Diego, CA, Bapineuzumab 201 Clinical Trial Investigators, San Francisco, CA  
**American Academy of Neurology: 2009 61st Annual Meeting**  
**April 25–May 2 Seattle, WA**

Increasing IV rt-PA Use Using Modern Eligibility Criteria. The Simplified Management of Acute Stroke Using Revised Treatment (SMART) Criteria Study: Feasibility, Safety and Efficacy

DC Tong, 1,2,3 N Barazangi, 1,2,3 JC Rose,1,2,3 J Thomas,1,2,3 D McDermott, 1,4 J Barakos,1,5 J Phan,1,3 A Bedenk1,2,3

CALIFORNIA PACIFIC MEDICAL CENTER (CPMC) COMPREHENSIVE STROKE CARE CENTER,<sup>1</sup> CPMC CENTER FOR STROKE RESEARCH,<sup>2</sup> CPMC DEPARTMENT OF NEUROSCIENCES,<sup>3</sup> CPMC DEPARTMENT OF EMERGENCY MEDICINE,<sup>4</sup> CPMC DEPARTMENT OF RADIOLOGY <sup>5</sup>  
**International Stroke Conference 2010, San Antonio, TX: Feb 23-26, 2010**

Prevalence of Vasogenic Edema and Microhemorrhage in an Alzheimer's Disease Study Population at Baseline.

Carlson C, Estergard W, Oh J, Suhy J, Jack CR Jr, Siemers E, Barakos J.

**Alzheimer's Association 2011 International Conference on Alzheimer's Disease (ICAD 2011)**  
**Porte de Versailles, Paris France: July 16-21-2011**

"Vasogenic Edema in the setting of  $\beta$ -amyloid lowering therapy, adverse event: what is it and how is it detected?"

Barakos J, Oh J, Suhy J, Carlson C, Estergard W, Jack CR Jr, Siemers E.

**Alzheimer's Association 2011 International Conference on Alzheimer's Disease (ICAD 2011)**  
**Porte de Versailles, Paris France: July 16-21-2011**

#### PEER REVIEW PUBLICATIONS

1. **Extravasation from power injection near previous arteriotomy site: a case for caution.** Marx M, Wack JP, **Barakos JA**, Andrews BT. *J Vasc Interv Radiol.* 1998 Sep-Oct;**9**(5):857-8.
2. **Re: Treatment of a splenic artery aneurysm with use of a stent-graft.** Marx M, Wack J, Baker E, **Barakos JA.** *J Vasc Interv Radiol.* 2002 Dec;**13**(12):1282.
3. **Ovarian protection by occlusion of uteroovarian collateral vessels before uterine fibroid embolization.** Marx M, Wack JP, Baker EL, Stevens SK, **Barakos JA.** *J Vasc Interv Radiol* 2003 Oct;**14**(10):1329-32. PMID: 14551281
4. **Controlling for premorbid brain size in imaging studies: T1-derived cranium scaling factor vs. T2-derived intracranial vault volume.** George Fein, Victoria Di Sclafani, Colin Taylor, Kirk Moon, **Jerome Barakos**, Hoang Tran, Bennett Landman, Robert Shumway. *Psychiatry Research: Neuroimaging* 2004 Jul 30;**131**(2):169-76. PMID: 15313523
5. **Identification of the Epileptogenic Lobe in Neocortical Epilepsy with Proton MR Spectroscopic Imaging.** Mueller SG. D Laxer K. **Barakos JA.** Cashdollar N. Flenniken DL. Vermathen P. Matson GB. Weiner MW. *Epilepsia.* **45**(12):1580-9, 2004 Dec. [Comparative Study. Journal Article. Research Support, Non-U.S. Gov't. Research Support, U.S. Gov't, P.H.S.] PMID: 15571516
6. **Metabolic characteristics of cortical malformations causing epilepsy.** Mueller SG. Laxer KD. **Barakos JA.** Cashdollar N. Flenniken DL. Vermathen P. Matson GB. Weiner MW. *Journal of Neurology.* **252**(9):1082-92, 2005 Sep. [Journal Article. Research Support, N.I.H., Extramural. Research Support, Non-U.S. Gov't. Research Support, U.S. Gov't, P.H.S.]
7. **Statistical Parametric Mapping of the Brain: Sensitivity is Dramatically Increased and the Potential for Biased Results is Decreased by Using Brain-Extracted Images as Inputs.** George Fein, Bennett Landman, Hoang Tran, **Jerome Barakos**, et al. *Neuroimage.* 2006 May 1;**30**(4):1187-95. Epub 2006 Jan 25. PMID: 16442817

8. **Brain Atrophy in Long-Term Abstinent Alcoholics Who Demonstrate Impairment on a Simulated Gambling Task.** Authors: Dr. George Fein, Bennett Landman, M.S.; Hoang Tran, M.S.; Shannon McGillivray, B.A.; Peter Finn, Ph.D.; **Jerome Barakos, M.D.**; Kirk Moon, M.D. *Neuroimage*. 2006 Sep;32(3):1465-71. Epub 2006 Jul 26. PMID: 16872844
  
9. **Presumed bilateral lateral geniculate nuclei ischemia.** Imes RK, **Barakos J.** *AJNR Am J Neuroradiol*. 2006 Jan;27(1):9-10.
  
10. **Cystic orbital metastasis from endometrial carcinoma.** Authors: Char DH, Moretto JC, **Barakos JA.** Department of Ophthalmology, Stanford University, Stanford, CA, USA. *Orbit*. 2007 Mar;26(1):75-7.
  
11. **Novel symptomatology and changing epidemiology of domoic acid toxicosis in California sea lions (*Zalophus californianus*): an increasing risk to marine mammal health.** T. Goldstein<sup>1,2,\*</sup>, J. A. K. Mazet<sup>2</sup>, T. S. Zabka<sup>1,2</sup>, G. Langlois<sup>3</sup>, K.M. Colegrove<sup>4</sup>, M. Silver<sup>5</sup>, S. Bargu<sup>5</sup>, F. Van Dolah<sup>6</sup>, T. Leighfield<sup>6</sup>, P. A. Conrad<sup>3</sup>, J. Barakos<sup>7</sup>, D. C. Williams<sup>8</sup>, S. Dennison<sup>1</sup>, M. Haulena<sup>1</sup> and F. M. D. Gulland<sup>1</sup> <sup>1</sup>The Marine Mammal Center, 1065 Fort Cronkhite, Sausalito, CA 94965, USA <sup>2</sup>Wildlife Health Center, School of Veterinary Medicine, University of California, 1 Shields Avenue, Davis, CA 95616, USA <sup>3</sup>California Department of Public Health, 850 Marina Bay, Parkway, Richmond, CA 94804, USA <sup>4</sup>Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, 1 Shields Avenue, Davis, CA 95616, USA <sup>5</sup>Ocean Sciences Department, University of California, Santa Cruz, CA 95064, USA <sup>6</sup>National Oceans Services, SC219 Fort Johnston Road, Charleston, SC 29412, USA <sup>7</sup>California Pacific Medical Center, University of California, San Francisco, CA 94143, USA <sup>8</sup>Veterinary Medical Teaching Hospital, University of California, 1 Garrod Drive, Davis, CA 95616, USA. **Proceedings of the Royal Society of London - Series B: Biological Sciences**. 275(1632):267-76, 2008 Feb 7. [Journal Article. Research Support, Non-U.S. Gov't. Research Support, U.S. Gov't, Non-P.H.S.]
  
12. **"Increased White Matter Signal Hyperintensities in Long-Term Abstinent Alcoholics Compared to Non-Alcoholic Controls".** George Fein, Ph.D. <sup>a</sup>, Ryan Shimotsu, M.S. <sup>a</sup>, Victoria Di Sclafani, Ph.D. <sup>b</sup>, Jerome Barakos, M.D. <sup>c</sup>, and Clive Harper, M.D. <sup>d</sup>. <sup>a</sup> Neurobehavioral Research, Inc., 2800 Woodlawn Drive, Suite 129 Honolulu, HI 96822, USA, <sup>b</sup> Biomedical Sciences Program, University of Hawaii, John A. Burns School of Medicine, 651 Ilalo Street, Honolulu, HI 96813, USA, <sup>c</sup> California Pacific Medical Center, San Francisco, CA, <sup>d</sup> Department of Pathology, University of Sydney, NSW 2006, Australia. *Alcohol Clin Exp Res*. 2008 Oct 18; : PMID: 18976350.
  
13. **A PHASE 2 TRIAL OF BAPINEUZUMAB IN MILD TO MODERATE ALZHEIMER'S DISEASE.** Bapineuzumab, the first humanized anti-amyloid-beta (A $\beta$ ) monoclonal antibody for the potential treatment of Alzheimer's disease (AD), was evaluated in a phase 2 efficacy and safety study in patients with mild to moderate AD. Stephen Salloway,<sup>1</sup> Reisa Sperling,<sup>2</sup> Sid Gilman,<sup>3</sup> Nick Fox,<sup>4</sup> Kaj Blennow,<sup>5</sup> Murray Raskind,<sup>6</sup> Marwan Sabbagh,<sup>7</sup> Lawrence S. Honig,<sup>8</sup> Rachelle Doody,<sup>9</sup> Christopher H. van Dyck,<sup>10</sup> Ruth Mulnard,<sup>11</sup> Jerome Barakos,<sup>12</sup> Keith Gregg,<sup>13</sup> Enchi Liu,<sup>13</sup> Ivan Lieberburg,<sup>13</sup> Dale Schenk,<sup>13</sup> Ronald Black,<sup>14</sup> and Michael Grundman,<sup>13</sup> for the Bapineuzumab 201 Clinical Trial Investigators\*<sup>1</sup>Butler Hospital, Providence, RI; <sup>2</sup>Brigham & Women's Hospital, Boston, MA; <sup>3</sup>University of Michigan, Ann Arbor, MI; <sup>4</sup>Institute of Neurology, University College London, UK; <sup>5</sup>University of Göteborg, Sahlgrenska University Hospital, Mölndal, Sweden; <sup>6</sup>University of Washington, Seattle, WA; <sup>7</sup>Cleo Roberts Center for Clinical Research/Sun Health Research Institute, Sun City, AZ; <sup>8</sup>Columbia University, New York, NY; <sup>9</sup>Baylor College of Medicine, Houston, TX; <sup>10</sup>Yale University School of Medicine, New Haven CT; <sup>11</sup>University of California, Irvine, CA; <sup>12</sup>California Pacific Medical Center, San Francisco, CA; <sup>13</sup>Elan Pharmaceuticals, San Francisco, CA; <sup>14</sup>Wyeth Research, Collegeville, PA. *Neurology* 2009.

14. **Widespread Neocortical Abnormalities in Temporal Lobe Epilepsy With And Without Mesial Sclerosis.** Drs. Susanne G. Mueller, Kenneth D Laxer; Jerome Barakos; Ian Cheong; Paul Garcia; Michael W Weiner. **NeuroImage, Volume 46, Issue 2, June 2009, Pages 353-359.**
  
15. **Involvement of the thalamocortical network in TLE with and without mesiotemporal sclerosis**  
 \*Susanne G. Mueller, †Kenneth D. Laxer, †Jerome Barakos, \*Ian Cheong, \*Daniel Finlay, ‡Paul Garcia, \*Valerie Cardenas-Nicolson, and \*Michael W. Weiner \*Center for Imaging of Neurodegenerative Diseases, San Francisco, California, U.S.A. ; †Pacific Epilepsy Program, California Pacific Medical Center, San Francisco, California, U.S.A. ; and ‡Department of Neurology, University of California, San Francisco, California, U.S.A.  
**Epilepsia, Article first published online 1 DEC 2009; Epilepsia Volume 51, Issue 8, pages 1436–1445, August 2010**
  
16. **Neuroanatomy and Volumes of Brain Structures of a Live California Sea Lion (*Zalophus californianus*) from Magnetic Resonance Images**  
 Eric W. Montie <sup>1</sup>, Nicola Pussini <sup>2</sup>, Gerald E. Schneider <sup>3</sup>, Thomas W.K. Battey <sup>4</sup>, Sophie Dennison <sup>2,5</sup>, Jerome Barakos <sup>6</sup>, and Frances Gulland <sup>2</sup>  
<sup>1</sup>College of Marine Science, University of South Florida, Florida  
<sup>2</sup>The Marine Mammal Center, Sausalito, California  
<sup>3</sup>Department of Brain and Cognitive Sciences, MIT, Cambridge, Massachusetts  
<sup>4</sup>Eckerd College, Galbraith Marine Science Center, St. Petersburg, Florida  
<sup>5</sup>School of Veterinary Medicine, University of Wisconsin, Madison, Wisconsin  
<sup>6</sup>California Pacific Medical Center, University of California, San Francisco, California  
**THE ANATOMICAL RECORD 292:1523–1547 (2009), published by the American Association of Anatomists.**
  
17. **Age-Related Gray Matter Shrinkage in a Treatment Naïve Actively Drinking Alcohol-Dependent Sample.**  
 Drs. George Fein, Ryan Shimotsu, and Jerome Barakos.  
**Alcoholism: Clinical and Experimental Research, Vol. 34, No. 1 January 2010.**
  
18. **Movement, dive behavior, and survival of California sea lions (*Zalophus californianus*) posttreatment for domoic acid toxicosis**  
**MARINE MAMMAL SCIENCE, 26(1): 36–52 (January 2010)**  
**C\_ 2009 by the Society for Marine Mammalogy**  
 DOI: 10.1111/j.1748-7692.2009.00314.x  
 KATE THOMAS, JAMES T. HARVEY Moss Landing Marine Laboratories, Moss Landing, California 95039, U.S.A., TRACEY GOLDSTEIN The Marine Mammal Center, 1065 Fort Cronkhite, Sausalito, California 94965, U.S.A., JEROME BARAKOS Department of Radiology, California Pacific Medical Center, San Francisco, California 94115, U.S.A., FRANCES GULLAND The Marine Mammal Center, 1065 Fort Cronkhite, Sausalito, California 94965, U.S.A.
  
18. **[<sup>11</sup>C]PiB PET supports reduced cortical fibrillar Ab in Alzheimer's disease patients treated with bapineuzumab**

**The Lancet Neurology, Early Online Publication, 1 March 2010**



Juha O. Rinne, MD, PhD, <sup>1</sup> David J. Brooks, MD, DSc, <sup>2</sup> Martin Rossor, MD, FRCP, MRCP, <sup>3</sup> Nick Fox, MD, FRCP, <sup>3</sup> Roger Bullock, MA, MRCPsych, <sup>4</sup> William E. Klunk, MD, PhD, <sup>5</sup> Chester A. Mathis, PhD, <sup>5</sup> Kaj Blennow, MD, PhD, <sup>6</sup> Jerome Barakos, MD, <sup>7</sup> Aren A. Okello, MRCP, <sup>2</sup> Sofia Rodriguez Martinez de Llano MD, PhD, <sup>2</sup> Enchi Liu, PhD, <sup>8</sup> Martin Koller, MD, MPH, <sup>9</sup> Keith M. Gregg, PhD, <sup>8</sup> Dale Schenk, PhD, <sup>9</sup> Ronald Black, MD, <sup>10</sup> Michael Grundman, MD, MPH <sup>9</sup>

<sup>1</sup> Turku PET Centre and CRST (Clinical Research Services Turku), University of Turku, Turku, Finland; <sup>2</sup> Division of Neuroscience and MRC Clinical Sciences Centre, Faculty of Medicine, Imperial College London, London, UK; <sup>3</sup> UCL, Institute of Neurology, London, UK; <sup>4</sup> Kingshill Research Centre, Swindon, UK; <sup>5</sup> University of Pittsburgh Medical Center, Pittsburgh, PA; <sup>6</sup> University of Göteborg, Sahlgrenska University Hospital, Mölndal, Sweden; <sup>7</sup> California Pacific Medical Center, San Francisco, CA; <sup>8</sup> Elan Pharmaceuticals, South San Francisco, CA; <sup>9</sup> Janssen Alzheimer Immunotherapy, South San Francisco, CA; <sup>10</sup> Wyeth Research, Collegeville, PA

20. **Involvement of the thalamocortical network in TLE with and without mesiotemporal sclerosis.**  
 Susanne G. Mueller<sup>1</sup>, Kenneth D. Laxer<sup>2</sup>, Jerome Barakos<sup>2</sup>, Ian Cheong<sup>1</sup>, Daniel Finlay<sup>1</sup>, Paul Garcia<sup>3</sup>, Valerie Cardenas-Nicolson<sup>1</sup>, Michael W. Weiner<sup>1</sup>  
**Epilepsia. Volume 51, Issue 8, pages 1436–1445, August 2010**
  
21. **Subfield atrophy pattern in temporal lobe epilepsy with and without mesial sclerosis detected by high-resolution MRI at 4 Tesla: Preliminary results.**  
**Epilepsia Article first published online: 12 MAR 2009**  
**Volume 50, Issue 6, pages 1474–1483, June 2009**  
 Susanne G. Mueller<sup>1</sup>, Kenneth D. Laxer<sup>2</sup>, Jerome Barakos<sup>2</sup>, Ian Cheong<sup>1</sup>, Paul Garcia<sup>3</sup>, Michael W. Weiner<sup>1</sup>
  
22. **Age-Related Gray Matter Shrinkage in a Treatment Naïve Actively Drinking Alcohol-Dependent Sample. Article first published online: 23 OCT 2009. Alcoholism: Clinical and Experimental Research. Volume 34, Issue 1, pages 175–182, January 2010.**  
 George Fein, Ryan Shimotsu, Jerome Barakos
  
23. **Fibrous Dysplasia.**  
**Orbit. August 2010, Vol. 29, No. 4 , Pages 216-218**  
 Devron H. Char, MD<sup>1</sup>, Jerome A. Barakos, MD<sup>2</sup>, Charles S. Cobbs, MD<sup>3</sup>, Matthew J. Shiel, BS<sup>1</sup>  
<sup>1</sup>The Tumori Foundation, San Francisco, CA  
<sup>2</sup>Neuroimaging, California Pacific Medical Center, San Francisco, CA  
<sup>3</sup>Neurosurgery, California Pacific Medical Center, San Francisco, CA
  
24. **Intra-Lacrimal Gland Cavernous Hemangioma.**  
 2010 Orbit, 29 (6), 354-356, 2010 Informa Healthcare USA.  
 Devron H. Char, MD<sup>1</sup>, Jerome A. Barakos, MD<sup>2</sup>, John Moretto, MD<sup>3</sup>  
<sup>1</sup>The Tumori Foundation, San Francisco, CA  
<sup>2</sup>Neuroimaging, California Pacific Medical Center, San Francisco, CA  
<sup>3</sup>Dept of Pathology, California Pacific Medical Center, San Francisco, CA
  
25. **Pneumocerebellum in a Live Yearling *Zalophus californianus*: The Bends in a Sea Lion?**



**William Van Bonn<sup>1</sup>, Eric Montie<sup>2</sup>, Sophie Dennison<sup>1</sup>, Nicola Pussini<sup>1</sup>, Peter Cook<sup>3</sup>, Denise Greig<sup>1</sup>, Jerome Barakos<sup>4</sup>, Kathleen Colegrove<sup>5</sup> & Frances Gulland<sup>1</sup>**

1. Veterinary Science Department, The Marine Mammal Center, Sausalito, CA 94965, USA
2. College of Marine Science, University of South Florida, Tampa, FL 33620, USA
3. Psychology Department, University of California at Santa Cruz, Santa Cruz, CA 95064, USA
4. California Pacific Medical Center, University of California at San Francisco, San Francisco, CA 94143, USA
5. Zoological Pathology Program, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, Maywood, IL 60153, USA

**Nature Proceedings: Pre-publication posting**

**25. Evidence of injury caused by gas bubbles in a live marine mammal: barotrauma in a California sea lion *Zalophus californianus*.** Van Bonn W, Montie E, Dennison S, Pussini N, Cook P, Greig D, Barakos J, Colegrove K, Gulland F. **Diseases of Aquat Organ. 2011 Sep 9;96(2):89-96.**

**26. Widespread extrahippocampal NAA/(Cr+Cho) abnormalities in TLE with and without mesial temporal sclerosis.**

Mueller SG, Ebel A, Barakos J, Scanlon C, Cheong I, Finlay D, Garcia P, Weiner MW, Laxer KD. **Journal of Neurology (2011) Volume 258, Number 4, 603-612, DOI: 10.1007/s00415-010-5799-6 J Neurol. 2010 Oct 26. [Epub ahead of print] PMID: 20976465**

**27. Impact of Methodologic Choice for Automatic Detection of Different Aspects of Brain Atrophy by Using Temporal Lobe Epilepsy as a Model**

C. Scanlon, S.G. Mueller, D. Tosun, I. Cheong, P. Garcia, J. Barakos, M.W. Weiner and K.D. Laxer **American Journal of Neurology (AJNR) Published online before print August 18, 2011, doi: 10.3174/ajnr.A2578 AJNR 2011 32: 1669-1676**

**28. Prevalence of asymptomatic vasogenic edema in pretreatment Alzheimer's disease study cohorts from phase 3 trials of semagacestat and solanezumab.**

Christopher Carlson, Wahiba Estergard, Joonmi Oh, Joyce Suhy, Clifford R. Jack Jr., Eric Siemers, Jerome Barakos

**Alzheimer's and Dementia: Volume 7, Issue 4, July 2011, Pages 396-401 Alzheimers Association**

## **RECENTLY ACCEPTED PEER REVIEW PUBLICATIONS**

**Neuroanatomy and Volumes of Brain Structures of a Live California Sea Lion (*Zalophus californianus*) from Magnetic Resonance Images**

Eric W. Montie 1, Nicola Pussini 2, Gerald E. Schneider 3, Thomas W.K. Battey 4, Sophie Dennison 2,5, Jerome Barakos 6, and Frances Gulland 2

1 College of Marine Science, University of South Florida, FL, 33701

2 The Marine Mammal Center, Sausalito, CA, 94965

3 Dept. of Brain and Cognitive Sciences, MIT, Cambridge, MA, 02139

4 Eckerd College, Galbraith Marine Science Center, St. Petersburg, FL, 33711

5 School of Veterinary Medicine, Madison, WI, 53706

6 California Pacific Medical Center, University of California, San Francisco, CA, 94143

**A PHASE 2 MULTIPLE ASCENDING DOSE TRIAL OF BAPINEUZUMAB IN MILD TO MODERATE ALZHEIMER'S DISEASE**

Stephen Salloway, M.D., M.S.,<sup>1</sup> Reisa Sperling, M.D., M.MSc.<sup>2</sup> Sid Gilman, M.D., F.R.C.P.,<sup>3</sup> Nick C. Fox, M.D., F.R.C.P.,<sup>4</sup> Kaj Blennow, M.D.,<sup>5</sup> Murray Raskind, M.D.,<sup>6</sup> Marwan Sabbagh, M.D.,<sup>7</sup> Lawrence S. Honig, M.D., Ph.D.,<sup>8</sup> Rachele Doody, M.D., Ph.D.,<sup>9</sup> Christopher H. van Dyck, M.D.,<sup>10</sup> Ruth Mulnard, D.N.Sc., F.A.A.N.,<sup>11</sup> Jerome Barakos, M.D.,<sup>12</sup> Keith M. Gregg, Ph.D.,<sup>13</sup> Enchi Liu, Ph.D.,<sup>13</sup> Ivan Lieberburg, M.D., Ph.D.,<sup>13</sup> Dale Schenk, Ph.D.,<sup>13</sup> Ronald Black, M.D.,<sup>14</sup> and Michael Grundman, M.D., M.P.H.,<sup>13</sup> for the Bapineuzumab 201 Clinical Trial Investigators\*

<sup>1</sup>Butler Hospital, Providence, RI; <sup>2</sup>Brigham & Women's Hospital, Boston, MA; <sup>3</sup>University of Michigan, Ann Arbor, MI; <sup>4</sup>UCL, Institute of Neurology, London, UK; <sup>5</sup>University of Göteborg, Sahlgrenska University Hospital, Mölndal, Sweden; <sup>6</sup>VA Medical Center, Seattle, WA; <sup>7</sup>Cleo Roberts Center for Clinical Research/Sun Health Research Institute, Sun City, AZ; <sup>8</sup>Columbia University, New York, NY; <sup>9</sup>Baylor College of Medicine, Houston, TX; <sup>10</sup>Yale University School of Medicine, New Haven, CT; <sup>11</sup>University of California, Irvine, CA; <sup>12</sup>California Pacific Medical Center, San Francisco, CA; <sup>13</sup>Elan Pharmaceuticals, South San Francisco, CA; <sup>14</sup>Wyeth Research, Collegeville, PA

Published online before print November 18, 2009, doi:  
10.1212/WNL.0b013e3181c67808 **Neurology December 15, 2009 vol. 73 no. 24 2061-2070**

**[<sup>11</sup>C]PiB PET supports reduced cortical fibrillar Ab in Alzheimer's disease patients treated with bapineuzumab**

Juha O. Rinne, MD, PhD, <sup>1</sup> David J. Brooks, MD, DSc, <sup>2</sup> Martin Rossor, MD, FRCP, MRCP, <sup>3</sup> Nick Fox, MD, FRCP, <sup>3</sup> Roger Bullock, MA, MRCPsych, <sup>4</sup> William E. Klunk, MD, PhD, <sup>5</sup> Chester A. Mathis, PhD, <sup>5</sup> Kaj Blennow, MD, PhD, <sup>6</sup> Jerome Barakos, MD, <sup>7</sup> Aren A. Okello, MRCP, <sup>2</sup> Sofia Rodriguez Martinez de Llano MD, PhD, <sup>2</sup> Enchi Liu, PhD, <sup>8</sup> Martin Koller, MD, MPH, <sup>9</sup> Keith M. Gregg, PhD, <sup>8</sup> Dale Schenk, PhD, <sup>9</sup> Ronald Black, MD, <sup>10</sup> Michael Grundman, MD, MPH <sup>9</sup>

<sup>1</sup> Turku PET Centre and CRST (Clinical Research Services Turku), University of Turku, Turku, Finland; <sup>2</sup> Division of Neuroscience and MRC Clinical Sciences Centre, Faculty of Medicine, Imperial College London, London, UK; <sup>3</sup>UCL, Institute of Neurology, London, UK; <sup>4</sup>Kingshill Research Centre, Swindon, UK; <sup>5</sup>University of Pittsburgh Medical Center, Pittsburgh, PA; <sup>6</sup>University of Göteborg, Sahlgrenska University Hospital, Mölndal, Sweden; <sup>7</sup>California Pacific Medical Center, San Francisco, CA; <sup>8</sup>Elan Pharmaceuticals, South San Francisco, CA; <sup>9</sup>Janssen Alzheimer Immunotherapy, South San Francisco, CA; <sup>10</sup>Wyeth Research, Collegeville, PA

The Lancet Neurology, Early Online Publication, 1 March 2010  
**The Lancet Neurology** - Volume 9, Issue 4 (April 2010)

**CEREBELLAR PNEUMATOSIS IN A LIVE CALIFORNIA SEA LION (*ZALOPHUS***

**CALIFORNIANUS)** N. Pussini<sup>1\*</sup>, E. Montie<sup>1, 2</sup>, W. Van Bonn<sup>1</sup>, S. E. Dennison<sup>3</sup>, D. J. Greig<sup>1</sup>, J. Barakos<sup>4</sup>, F. M. D. Gulland<sup>1</sup>, <sup>1</sup>The Marine Mammal Center, 2000 Bunker Road, Sausalito, CA <sup>2</sup>College of Marine Science, University of South Florida, FL <sup>3</sup> Sam Silverman and Associates, 10 Liberty Ship Way #102, Sausalito, CA <sup>4</sup> California Pacific Medical Center, University of California, San Francisco, CA.

**Science**

**Amyloid-related imaging abnormalities in patients with Alzheimer's disease treated with bapineuzumab: a retrospective analysis.**

Lancet Neurol. 2012 Feb 2. [Epub ahead of print]

**The Lancet Neurology - Volume 11, Issue 3 (March 2012)**

Sperling R, Salloway S, Brooks DJ, Tampieri D, Barakos J, Fox NC, Raskind M, Sabbagh M, Honig LS, Porsteinsson AP, Lieberburg I, Arrighi HM, Morris KA, Lu Y, Liu E, Gregg KM, Brashear HR, Kinney GG, Black R, Grundman M.

Source: Center for Alzheimer Research and Treatment, Brigham and Women's Hospital, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA.

**Abstract**

**BACKGROUND:**

Amyloid-related imaging abnormalities (ARIA) have been reported in patients with Alzheimer's disease treated with bapineuzumab, a humanised monoclonal antibody against amyloid  $\beta$ . ARIA include MRI signal abnormalities suggestive of vasogenic oedema and sulcal effusions (ARIA-E) and microhaemorrhages and haemosiderin deposits (ARIA-H). Our aim was to investigate the incidence of ARIA during treatment with bapineuzumab, and evaluate associated risk factors.

**METHODS:**

Two neuroradiologists independently reviewed 2572 fluid-attenuated inversion recovery (FLAIR) MRI scans from 262 participants in two phase 2 studies of bapineuzumab and an open-label extension study. Readers were masked to the patient's treatment, APOE  $\epsilon$ 4 genotype, medical history, and demographics. Patients were included in risk analyses if they had no evidence of ARIA-E in their pre-treatment MRI, had received bapineuzumab, and had at least one MRI scan after treatment. We used Kaplan-Meier survival analysis to examine the distribution of incident ARIA-E from the start of bapineuzumab treatment and proportional hazards regression models to assess risk factors associated with ARIA.

**FINDINGS:**

210 patients were included in the risk analyses. 36 patients (17%) developed ARIA-E during treatment with bapineuzumab; 15 of these ARIA-E cases (42%) had not been detected previously. 28 of these patients (78%) did not report associated symptoms. Adverse events, reported in eight symptomatic patients, included headache, confusion, and neuropsychiatric and gastrointestinal symptoms. Incident ARIA-H occurred in 17 of the patients with ARIA-E (47%), compared with seven of 177 (4%) patients without ARIA-E. 13 of the 15 patients in whom ARIA were detected in our study received additional treatment infusions while ARIA-E were present, without any associated symptoms. Occurrence of ARIA-E increased with bapineuzumab dose (hazard ratio [HR] 2.24 per 1 mg/kg increase in dose, 95% CI 1.40-3.62;  $p=0.0008$ ) and presence of APOE  $\epsilon$ 4 alleles (HR 2.55 per allele, 95% CI 1.57-4.12;  $p=0.0001$ ).

**INTERPRETATION:**

ARIA consist of a spectrum of imaging findings with variable clinical correlates, and some patients with ARIA-E remain asymptomatic even if treatment is continued. The increased risk of ARIA among APOE  $\epsilon$ 4 carriers, its association with high bapineuzumab dose, and its timecourse in relation to dosing suggest an association between ARIA and alterations in vascular amyloid burden.

**INVITED FACULTY GUEST LECTURES (NATIONAL & INTERNATIONAL)**

**International Conference: Research and Standardization in Alzheimer's Disease  
Melbourne Australia. 26-29 March, 2012**

•"Current Industry Neuroimaging: Experience in Clinical Trials"

**ASNR 50th Annual Meeting & The Foundation of the ASNR Symposium 2012  
April 21 - 26, 2012, New York, NY**

**ARIA Symposium**

•"ARIA: MR Imaging Features"

**Investigational Clinical Amyloid Research in Alzheimer's, Vienna, Austria July 2009.**  
-"Radiographic Features of Bapineuzumab Vasogenic Edema and Exclusionary MRI Findings"

**California Pacific Medical Center**  
**Pediatric Grand Rounds**  
**San Francisco CA, January 18, 2008**  
•"Advances in Pediatric NeuroImaging"

**Frontiers in Pediatric Hospitalist Medicine**  
**San Francisco CA, October 25-26, 2007**  
•"Advances in Pediatric NeuroImaging: Hypoxic Ischemic injury and beyond"

**Tripler Army Medical Center, Honolulu Hawaii.**  
**Resident Review Course January 2005**  
•White Matter Disease (Adult & Pediatric)  
•Metabolic Encephalopathies  
•CNS Trauma  
•Pediatric Imaging: Neonatal Encephalopathies (Acquired and Congenital)  
•MR Advances in Head & Neck Imaging  
•Imaging of the Spinal Axis: Pitfalls of Imaging Interpretation

**American Academy of Pain Medicine.**  
18<sup>th</sup> Annual Symposium, San Francisco, CA, Feb 2002  
•"MRI and CT in the evaluation of Spinal Disorders: State of the Art"

**Clinical Magnetic Resonance Imaging Update.** Orlando, Florida, Feb 2000.  
•"Brain Tumor Imaging: State of the Art"

**Western NeuroRadiological Society**  
31<sup>st</sup> Annual Meeting, Kona Hawaii, October 1999  
•Cranial Nerve Focus Session: "Deep Space Masses of the Head and Neck"

**AFIP Neuroradiology Review Course**  
14<sup>th</sup> Annual, Bethesda, MD February 1999  
•"Cystic Brain Lesions"  
•"Functional MRI and Seizure Imaging"

**AFIP Neuroradiology Review Course**  
San Diego, CA, August 1999  
•"Cystic Brain Lesions"  
•"Functional MRI and Seizure Imaging"

**Central Oklahoma Radiological Society**  
Oklahoma City, September 1998  
•"Orbital MRI"

**American Roentgen Ray Society, Annual Meeting & Categorical Course.**  
San Francisco, CA April 1998  
*Course Director:* Ruth Ramsey, M.D.  
•"Cystic Lesions of the Brain: Differential Diagnosis"

**MRI Update, Hawaii Radiological Society.** May 1997.  
*Program Director,* Peter W. Abcarian, M.D.  
•"MRI of Orbital Pathology"

- "MRI of White Matter Disease"
- "Cystic Lesions of the Head and Neck"
- "Solid Lesions of the Neck"
- "Cystic Lesions of the Brain: Differential Diagnosis"

**Medical College of Wisconsin, MRI Update.** February 1996.

*Program Directors; Victor M. Haughton, M.D. & Robert M. Quencer, M.D.*

- "White Matter Disease"
- "Cystic Lesions of the Neck"
- "Solid Lesions of the Neck"
- "Cystic Lesions of the Brain: Differential Diagnosis"
- "Differential Diagnosis of the CNS Disease in AIDS Patients"
- "The Differential Diagnosis of Orbital Lesions"

**The Radiologic Society of South Africa,** Cape Town, South Africa, February 1998.

- "Spatial approach to the Head & Neck"
- "Solid Lesions of the Head & Neck"
- "Cystic Lesions of the Head and Neck"
- "MRI of White Matter Disease"
- "Differential Diagnosis of CNS Disease in AIDS"
- "Cystic Lesions of Brain: Differential Diagnosis"
- "MR in the Evaluation of Seizure Disorders"
- "MRI of Orbital Pathology"
- "CNS Vascular Malformations"
- "Overview of Functional Imaging"

**The Radiologic Society of Thailand.** Bangkok, Thailand, November 1995.

- "Contrast Enhanced MR Imaging of CNS Disorders"
- "Spinal Contrast Enhanced MR Imaging: Degenerative and Nondegenerative"

**The Radiologic Society of Thailand.** Bangkok, Thailand, March 1994.

- "Advances in Head & Neck MR Imaging: Fast Spin Echo & Fat Suppression"
- "Head & Neck MR Imaging: Anatomy and Pathology"
- "MR Angiography: Physics & Applications"
- "MR Angiography: Image Interpretation & Pitfalls"

**Hong Kong College of Radiologists.** Hong Kong, February 1993.

- "MR Imaging of the Head and Neck: Anatomy and Physiology"
- "MR Angiography: Principles, Applications and Pitfalls"
- "Pediatric CNS MR Imaging"

**Australian College of Radiology,** Australia, June 1993

- "Diseases of Central Nervous System White Matter"
- "MR Angiography: Head & Neck Applications"
- "Orbit MRI"
- "Advances in Head & Neck Imaging: Fast Spin Echo & Fat Suppression"
- "MR Imaging of the TMJ"
- "Intraaxial Brain Tumors"
- "Cystic lesions of the Head & Neck"

**Singapore Academy of Medicine, Chapter of Radiologists, and the Singapore**

**Radiological Society, 3rd Annual Scientific Meeting.** Singapore, February 1993.

- "Advances in Head & Neck MR Imaging: Fast Spin Echo & Fat Suppression"
- "Head & Neck MR Imaging: Anatomy and Pathology"



- "MR Angiography: Physics & Applications"
- "MR Angiography: Image Interpretation & Pitfalls"
- "Diseases of Central Nervous System White Matter"

**Mt. Elizabeth Medical Centre, Singapore, February 1993.**  
•"Contrast Enhanced MR Imaging of CNS Disorders"

**The Radiologic Society of Malaysia. Kuala Lumpur, Malaysia, February 1993.**  
•"Contrast Enhanced MR Imaging"  
•"MR Imaging of CNS Disorders"

**National University Kebangsaan Hospital of Malaysia and General Hospital, Kuala Lumpur, Malaysia, February 1993.**  
•"Artifacts and Pitfalls of MR Imaging"  
•"Diseases of Central Nervous System White Matter"  
•"MR Imaging of Central Nervous System Tumors"  
•"Spinal MR Imaging"

**National University Kebangsaan Hospital of Malaysia and General Hospital, Kuala Lumpur, Malaysia, February 1993.**  
•"Safety Considerations & Sedation in MR Imaging"  
•"Pediatric Neuro MR Imaging"  
•"MR Imaging Protocols"  
•"New Techniques in Head and Neck Imaging"

**International Symposium on the Current Status of Contrast Enhanced MRI. Singapore, February 1992.**  
•"Role of Gd-DTPA in Routine MR Imaging"

**The Radiologic Society of Thailand. Bangkok, Thailand, February 1992.**  
•"Contrast Enhanced MR Imaging of CNS Disorders"

**Evangelismos Hospital of Athens, Athens, Greece. Department of Radiodiagnostics & Radiotherapeutics, September 1991.**  
•"Nonglial Tumors of the Central Nervous System"  
•"Glial Tumors of the Central Nervous System"  
•"Pediatric CNS MR Imaging"

**American College of Radiology, 70th Annual Meeting & Categorical Course.**  
Orlando, Florida Sept 1993  
*Course Director:* John V. Cruess, M.D. & Anton N. Hasso, M.D.  
•"Principles of Contrast Use in Head & Neck MR Imaging"

**Clinical Magnetic Resonance Imaging. Maui, Hawaii, March 1993.**  
*Course Director:* Marc Coel, M.D.  
•"Spatial Approach to Head & Neck Imaging"  
•"Advances in Head & Neck Imaging: Fast Spin Echo & Fat Suppression"  
•"Nodal and Non-Nodal Disease of the Neck"  
•"Orbital MRI"

**Magnetic Resonance Angiography, UCSF Postgraduate Course. San Francisco, California, October 1992.**  
*Course Directors:* Charles M. Anderson M.D., & David Norman M.D.  
•"Artifacts & Pitfalls of Intracranial MRA"

**San Francisco Neurological Society, 1993 Annual Conference.** Sonoma, California, March 1993.

- "Clinical Indications & Applications of MR Angiography"

**Clinical Magnetic Resonance Imaging, UCSF Postgraduate Course.** San Francisco, California, October 1992.

*Course Director:* Charles B. Higgins, M.D.

- "Orbital Imaging"
- "Myelopathy"

**Progress in Clinical MR Imaging for Technologists, UCSF '92.** San Francisco, California.

*Course Director:* Robert G. Gould, Ph.D.

- "MR Angiography: Physics" 10/92
- "MR Angiography: Intra and Extracranial Applications" 10/92
- "Advances in Head & Neck Imaging: Fast Spin Echo & Fat Suppression" 11/92
- "Safety Considerations & Sedation in MR Imaging" 3/92, 11/92

**American Society of Head and Neck Radiology.** 23rd Annual Conference. Chicago, Illinois, April 1992.

- "Fat Suppression Pulse Sequence MRI: Techniques and Artifacts."

**Head and Neck Imaging Course, UCSF Postgraduate Course.** Rancho Mirage, California, February 1992.

*Course Directors:* William P. Dillon M.D., H. Ric Harnsberger M.D., & Hugh Curtain M.D.

- "New Techniques in Head & Neck Imaging"
- "Nodal and Non-Nodal Disease of the Neck"
- "MR Angiography"
- "The Orbit"
- "Temporomandibular Joint"

**American Society of Head and Neck Radiology.** 22nd Annual Conference. Boston, Massachusetts, April 1991.

- "The Use of Contrast Enhanced Fat Suppression MR Imaging in the Extracranial Head and Neck."

**Otolaryngology, Neurotology & Head and Neck Surgery Grand Rounds.** University of California, San Francisco, Departments of Otolaryngology, Neurotology, Head and Neck Surgery.

- "Applications of MR Angiography in the Head and Neck" 11/91

**North Bay MRI Tutorials.**

*Course Director:* William M. Kelly, M.D.

- "Fat Suppression MRI: Techniques and Artifacts." 11/93
- "Advances in Head and Neck Imaging" 10/91, 3/92, 9/92, 11/92
- "Nasopharynx and Oral Cavity" 10/91, 11/93
- "Cystic Head and Neck Masses" 3/92, 11/93
- "Spatial Approach to Head & Neck Imaging" 3/92, 9/92, 11/92, 11/93

**Central Valley Radiology Society & Fresno Veterans Administration Medical Center.** Fresno, California.

*Director:* Malcom Anderson, M.D.

- "Applications & Future Potential of MR Angiography" 1/92
- "MR Imaging of the Head & Neck" 1/92
- "Emergency Neuro CT Imaging" 1/92

**Biomedical Conference on the Advances in Neuroradiology, Neurosurgery and Neurosciences.** San Diego, California, May 1992.

- "Advances in the Imaging of Neurologic Disease"

**Neuroradiology MRI Postgraduate Course.** University of California, San Francisco, Department of Neuroradiology.

*Course Director:* David Norman, M.D.

- "Diseases of Central Nervous System White Matter" 9/93
- "Cystic lesions of the Head & Neck" 2/93, 9/93
- "Problem-Solving in the Central Nervous System with MRI" 8/90, 11/90, 5/91, 9/91, 3/92, 4/92

**Neuroradiology MRI Postgraduate Course.** University of California, San Francisco, Department of Neuroradiology.

*Course Director:* David Norman, M.D.

- "Approach to Neuroimaging" 1/91, 4/91, 5/91, 9/91, 5/92
- "Contrast Enhanced Fat Suppression MR Imaging in the Extracranial Head and Neck" 4/91, 9/91, 5/92, 12/92
- "Safety Considerations & Sedation in MR Imaging" 9/91, 11/91, 3/92, 11/92

**Neuroradiology MRI Postgraduate Course.** University of California, San Francisco, Department of Neuroradiology.

*Course Director:* David Norman, M.D.

- "MR Imaging Protocols" 9/91, 11/91, 3/92
- "New Techniques in Head and Neck Imaging" 10/91, 3/92, 2/93
- "MRA: Problem-Solving Approach" 4/92, 5/92
- "MR Angiography: Applications and Pitfalls" 10/91, 11/91, 3/92, 5/92
- "MR Angiography Physics" 11/91, 3/92
- "Fat-Suppression MRI: Techniques and Artifacts" 4/92, 12/92, 3/93, 9/93
- "Spatial Approach to Head & Neck Imaging" 10/91, 11/91, 3/92, 5/92, 11/92, 2/93, 9/93
- "Temporomandibular Joint" 11/91, 3/92
- "Nodal and Non-Nodal Disease of the Neck" 11/91, 12/92, 3/93
- "The Orbit" 11/91, 3/92, 4/92, 5/92

**Body & Musculoskeletal MRI Visiting Fellowship Review Course.** University of California, San Francisco, Department of Radiology.

*Course Directors:* Charles B. Higgins M.D., Hedi Hricak M.D., & Clyde Helms M.D.

- "Cystic Head and Neck Masses" 9/91, 3/92
- "Head and Neck Imaging" 9/91, 10/91, 12/91, 1/92
- "Advances in Head and Neck Imaging" 9/91, 10/91, 12/91, 1/92
- "Spatial Approach to Head & Neck Imaging" 3/92

**University of California Radiologic Imaging Laboratory, MR Imaging Review Course.** University of California, San Francisco.

*Course Director:* Leon Kaufman, Ph. D.

- "MR Imaging of the Head and Neck" 10/89, 2/90.
- "Central Nervous System Anatomy" 10/89, 2/90.
- "MR Imaging of Congenital Anomalies of the CNS" 2/90, 9/90.
- "Central Nervous System Neoplasms: MR Imaging" 5/90, 9/90.
- "Pediatric Neuro MR Imaging" 5/90

**San Francisco Magnetic Resonance Center: MR Imaging Review Course.** University of California, San Francisco.

- "MRI Physics and Biohazards" 11/90
- "MRI Safety Considerations and Sedation" 11/91
- "Principles of Tissue Contrast in MR Imaging" 11/91

**Advanced Musculoskeletal MRI Visiting Fellowship Review Course.** University of California, San

Francisco, Department of Radiology.

*Course Director:* Clyde Helms M.D.

- "Nondegenerative Diseases of the Spine" 4/92

**Progress in Clinical MR Imaging for Technologists, UCSF '91.** University of California, San Francisco.

*Course Director:* Robert G. Gould, Ph.D.

- "Common Diagnostic Pitfalls in Pediatric Neuro Imaging" 10/91
- "MR Imaging of the Spine: Applications, Techniques and Pitfalls" 10/91, 12/91
- "Safety Considerations in MRI" 10/91, 11/91, 1/92
- "Techniques in Head and Neck Imaging" 11/91
- "Neuroanatomy: MR Imaging" 11/91

**Current Approaches to Radiation Oncology, Biology & Physics.** 12th Annual Conference. University of California, San Francisco, California, March 1992.

*Course Directors:* Jeanne Marie Quivey M.D., Eli Glatstein M.D., & David A. Larson M.D.

- "The Role of MR Imaging in Radiation Oncology."

**Progress in Clinical MR Imaging for Technologists, UCSF.** Beverly Hills, California.

*Course Director:* Robert G. Gould, Ph.D.

- "MR Imaging of the Head & Neck: Applications, Techniques and Pitfalls" 4/92, 5/93
- "MR Angiography Physics" 4/92
- "Pediatric MR Imaging" 5/93

**University of California, San Francisco Resident Review Course.**

**Second Annual Review Course**

*Course Director:* Gordon Gamsu, M.D.

- "Neuroradiology Section Moderator" 4/92
- "Head and Neck Imaging" 4/92

**Third Annual Review Course**

*Course Director:* Gordon Gamsu, M.D.

- "Neuroradiology Section Moderator" 4/93
- "Head and Neck Imaging" 4/93

**Fourth Annual Review Course**

*Course Director:* Ruth Goldstein, M.D.

- "Neuroradiology Section Moderator" 3/94
- "Imaging of CNS Infections" 3/94
- "Head and Neck Imaging" 3/94

**Fifth Annual Review Course**

*Course Director:* Ruth Goldstein, M.D.

- "Neuroradiology Section Moderator" 3/95
- "Imaging of CNS Infections" 3/95

**Sixth Annual Review Course**

*Course Director:* Ruth Goldstein, M.D.

- "Imaging of CNS Infections" 2/96

**CURRENT RESEARCH PROJECTS**

1. 2006 - current: International Alzheimer study: use of immunogenic agent. A Phase IIa, Multicenter,

Randomized, Third-party unblinded, Adjuvant-Controlled, Multiple Ascending Dose, Safety, Tolerability, and Immunogenicity Trial in Subjects with Mild to Moderate Alzheimer's Disease

2. 2006 Elan Alzheimer investigational study: transgenic animal models of human Alzheimer's disease.  
Use of immunogenic agent on transgenic animal models of human Alzheimer's disease (Mammalia. Order: Primate model)
3. 2007 Elan Alzheimer investigational study: transgenic animal models of human Alzheimer's disease  
Use of immunogenic agent on PDAPP Transgenic Mice (Mammalia. Order: Rodentia model)
4. MRI and FDG-PET fusion in the detection and characterization of primary and metastatic neoplasia.
5. MRI and FDG-PET fusion in the detection and characterization of CNS trauma.
6. MRS correlation with cortical dysplasia in neocortical epilepsy.
7. MRS correlation in neonatal encephalopathy including perinatal ischemia.
8. Veterans Administration Medical Center San Francisco: 4T investigational study epilepsy: Identification of epileptogenic foci using high resolution MRI, MR spectroscopy and arterial spin labeling perfusion imaging.
9. Sub-lethal Effects of Domoic Acid on *Zalophus californianus*, Sentinels of Ocean Changes that Affect Human Health.
10. Movement, dive behavior and survivability of California sea lions (*Zalophus californianus*) post-treatment for domoic acid toxicosis.

### **Research Programs**

National Institute on Drug Abuse (NIDA)  
Dr. Fein (PI) 2006-2008

#### **Automated Delineation and Quantification of WMSH (SBIR Phase II Contract)**

The goal of the Phase I proposal is to demonstrate the feasibility of automatically delineating and quantifying white matter T2 signal hyperintensities (WMSHs) on FLAIR MR images. We have successfully completed the Phase I feasibility project.

Role: Board certified radiology Consultant

RADIATION THERAPY ONCOLOGY GROUP  
RTOG 0625

#### **A RANDOMIZED PHASE II TRIAL OF BEVACIZUMAB WITH IRINOTECAN OR BEVACIZUMAB WITH TEMOZOLOMIDE IN RECURRENT GLIOBLASTOMA**

NCI-Supplied Agents: Bevacizumab (NSC 704865; IND 7921), Irinotecan (NSC 616348)

This is a collaborative effort with American College of Radiology Imaging Network (ACRIN) –  
ACRIN Study Number 6677

Role: Board certified radiologist as ACRIN PI

#### **MRI (Magnetic Resonance Imaging) in PDAPP Transgenic Mice 2006-2008**

The use of mu3D6, the murine monoclonal (IgG2a) parent of AAB-001, permits assessment of possible MRI changes in an entirely homologous animal model system (ie, a mouse antibody administered to a mouse), that might be more sensitive in revealing MRI changes that require both antigen-specific binding